RAILROAD SAFETY

HEARINGS

BEFORE THE

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE UNITED STATES SENATE

EIGHTY-THIRD CONGRESS

FIRST SESSION

ON

S. 539

A BILL TO AUTHORIZE THE INTERSTATE COMMERCE COMMISSION TO MAKE MANDATORY THE INSTALLATION OF CERTAIN RAILROAD COMMUNICATION SYSTEMS

AND

S. 1401

A BILL TO AUTHORIZE THE INTERSTATE COMMERCE COMMISSION TO REQUIRE CARRIERS ENGAGED IN INTERSTATE COMMERCE BY RAILROAD TO INSTALL POWER BRAKES WHICH COMPLY WITH SPECIFICATIONS AND REQUIREMENTS PRESCRIBED BY THE COMMISSION AND TO PRESCRIBE RULES, STANDARDS, AND INSTRUCTIONS FOR THE INSTALLATION, INSPECTION, MAINTENANCE, AND REPAIR OF SUCH POWER BRAKES

APRIL 14 AND 15, 1953

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RAILROAD SAFETY

TUESDAY, APRIL 14, 1953

UNITED STATES SENATE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C.

The committee met at 10:06 a. m., in room G–16, Capitol, Senator Charles W. Tobey (chairman) presiding.

Present: Senators Tobey, Schoeppel, Griswold, Potter, and Johnson.

Also present: E. R. Jelsma, member of the professional staff, and Gene Dawson, administrative assistant to Hon. Homer E. Capehart.

The CHAIRMAN. The committee is in session. We are here this morning to hear testimony on S. 539 and S. 1401. Both bills are to authorize the Interstate Commerce Commission to make mandatory certain communication systems in the public interest and public safety. The bills will be inserted in the record at this point.

(The bills referred to are as follows:)

[S. 539, 83d Cong., 1st sess.]

A BILL To authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) subsections (b) and (c) of section 25 of the Interstate Commerce Act (49 U. S. C., sec. 26 (a) and 26 (b)) are amended to read as follows:

"(b) The Commission may, after investigation (and with respect to mandatory orders, after hearing, if a hearing is requested by any interested party), if found necessary in the public interest, order any carrier within a time specified in the order, and with respect to the whole or any part of its railroad, (1) to install the block signal system, interlocking, automatic train stop, train control, and/or cab-signal devices, and/or other similar appliances, methods, and systems intended to promote the safety of railroad operation (including telegraph, telephone, radio, inductive, or other wayside and/or train-communication systems), which comply with specifications and requirements prescribed by the Commission, and (2) to establish, maintain, and observe rules and regulations for the operation of trains in connection with the above-named devices, appliances, methods, and systems, intended to promote safety of railroad operation, such order to be issued and published a reasonable time (as determined by the Commission) in advance of the date for its fulfillment: *Provided*, That block signal systems, interlocking, automatic train stop, train control, cab-signal devices, and telegraph, telephone, radio, inductive, or other wayside and/or train-communications systems in use on August 26, 1937, or such systems or devices thereafter installed may not be discontinued or materially modified by carriers without the approval of the Commission: *Provided further*, That a carrier shall not be held to be negligent because of its failure to install such systems, devices, appliances, methods, rules, or regulations upon a portion of its railroad not included in the order, and any action arising because of an accident occurring upon such portion of its railroad shall be determined without consideration of the use of such systems, devices, appliances, methods, rules, or regulations upon another portion of its railroad: *And provided further*, That any order of the Interstate Commerce Commission directing any carrier to take action that requires the obtaining of a radio wave band or frequency, station permit, or license under the Communications Act of 1934, as

amended, shall be issued subject to the granting by the Federal Communications Commission of the required authorization. The carrier to which such order of the Interstate Commerce Commission applies shall, within such time as may be specified therein, make application to the Federal Communications Commission for such authorization. If and when such authorization is granted the carrier shall comply with the order of the Interstate Commerce Commission, subject, however, to such conditions as may be imposed by the Federal Communications Commission and to the provisions of the Communications Act of 1934, as amended, and the rules and regulations prescribed thereunder, including the right of the Federal Communications Commission to modify, suspend, revoke, or refuse to renew the license or other authorization so granted when the public interest, convenience, or necessity so requires.

"(c) Each carrier shall file with the Commission its rules, standards, and instructions for the installation, inspection, maintenance, and repair of the systems, devices, and appliances covered by this section within six months after August 26, 1937 (or within six months after enactment hereof in the case of telegraph, telephone, inductive, or other wayside and/or train communications systems), and, after approval by the Commission, such rules, standards, and instructions, with such modifications as the Commission may require, shall become obligatory upon the carrier: *Provided, however*, That if any such carrier shall fail to file its rules, standards, and instructions the Commission shall prepare rules, standards, and instructions for the installation, inspection, maintenance, and repair of such systems, devices, and appliances to be observed by such carrier, which rules, standards, and instructions, a copy thereof having been served on the president, chief operating officer, trustee, or receiver, of such carrier, shall be obligatory: *Provided further*, That such carrier may from time to time change the rules, standards, and instructions herein provided for, but such change shall not take effect and the new rules, standards, and instructions be enforced until they shall have been filed with and approved by the Commission: *And provided further*, That the Commission may on its own motion, upon good cause shown, revise, amend, or modify the rules, standards, and instructions prescribed by it under this subsection, and as revised, amended, or modified they shall be obligatory upon the carrier after a copy thereof shall have been served as above provided. Each carrier shall file with the Commission its rules and regulations for the operation of trains in connection with the devices, appliances, methods, and systems covered by this section within three months after the enactment hereof, and shall thereafter file with the Commission any revision, amendment, or modification of such rules and regulations within thirty days after the effective date of such revision, amendment, or modification."

(b) Subsection (d) of section 25 of the Interstate Commerce Act (49 U. S. C., sec. 26 (d)) is amended by adding at the end thereof the following: "Nothing in this section shall affect the powers of the Federal Communications Commission to make any inspection or examination of equipment utilizing radio frequencies or radio frequency energy in accordance with the provisions of the Communications Act of 1934, as amended, or the rules and regulations of the Federal Communications Commission."

[S. 1401, 83d Cong., 1st sess.]

A BILL To authorize the Interstate Commerce Commission to require carriers engaged in interstate commerce by railroad to install power brakes which comply with specifications and requirements prescribed by the Commission and to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power brakes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 1 of the Safety Appliance Acts (45 U. S. C., title 45, ch. 1, secs. 1–16) is amended by adding the following:

"The Interstate Commerce Commission may, after investigation, if found necessary in the public interest, order any carrier engaged in interstate commerce by railroad to install power or train brakes which comply with specifications and requirements prescribed by the Commission.

"Each common carrier engaged in interstate commerce by railroad shall file with the Commission within three months after the enactment hereof its rules, standards, and instructions for the installation, inspection, maintenance, and repair of the power or train brakes covered by this section, and, after approval by the Commission, such rules, standards, and instructions, with such modifications as the Commission may require, shall become obligatory upon the carrier: *Provided, however*, That if any such carrier shall fail to file its rules, standards, and

instructions the Commission shall prepare rules, standards, and instructions for the installation, inspection, maintenance, and repair of such systems, devices, and appliances to be observed by such carrier, which rules, standards, and instructions, a copy thereof having been served on the president, chief operating officer, trustee, or receiver, of such carrier, shall be obligatory: *Provided further*, That such carrier may from time to time change the rules, standards, and instructions herein provided for, but such change shall not take effect and the new rules, standards, and instructions be enforced until they shall have been filed with and approved by the Commission: *And provided further*, That the Commission may on its own motion, upon good cause shown, revise, amend, or modify the rules, standards, and instructions prescribed by it under this subsection and as revised, amended, or modified they shall be obligatory upon the carrier after a copy thereof shall have been served as above provided.

The CHAIRMAN. The first witness this morning is Mr. W. D. Johnson, vice president of the Order of Railway Conductors.

Before we hear Mr. Johnson, we will insert in the record these documents: A letter from Mr. Paul A. Walker, Chairman of the Federal Communications Commission, dated March 13, 1953, on S. 539; a communication from Charles D. Mahaffie, Acting Chairman of the Committee on Legislation and Rules, Interstate Commerce Commission, dated March 10, 1953, on S. 539; a communication from Robert B. Murray, Jr., Acting Secretary of Commerce, dated March 20, 1953, on S. 539; communications from Robert T. Stevens, Secretary of the Army, dated March 14, 1953, and Col. William J. Flynn, dated April 9, 1953, Department of the Army, on S. 539; a communication from William P. Rogers, Deputy Attorney General, Department of Justice, dated April 8, 1953, on S. 539; a communication from James K. Knudson, Administrator, Defense Transport Administration, dated March 16, 1953, on S. 539; communication from Frank L. Yates, Acting Comptroller General of the United States, dated February 2, 1953, on S. 539; a communication from Lindsay C. Warren, Comptroller General of the United States, dated April 6, 1953, on S. 1401; and a statement of C. A. Miller, vice president and general counsel of the American Shortline Railroad Association, on S. 539 and S. 1401.

(The statements referred to are as follows:)

FEDERAL COMMUNICATIONS COMMISSION,
Washington, D. C.

DEAR SENATOR TOBEY: This is in reply to your letter of January 22, 1953, requesting the Commission to submit comments to your committee on S. 539, a bill to authorize the Interstate Commerce Commission to require the installation of certain railroad communication systems.

The Commission has given careful consideration to this bill, and we wish to submit the attached comments to your committee.

The Commission will be pleased to submit any further information or comments that your committee may desire. The Bureau of the Budget has informed us that it has no objection to the submission of these comments to your committee.

Sincerely yours,

PAUL A. WALKER, *Chairman.*

COMMENTS OF THE FEDERAL COMMUNICATIONS COMMISSION ON S. 539, A BILL TO AMEND SECTION 25 OF THE INTERSTATE COMMERCE ACT, TO PERMIT THE INTERSTATE COMMERCE COMMISSION TO REQUIRE RAILROADS TO INSTALL CERTAIN SIGNALING DEVICES

The bill under consideration proposes to amend section 25 of the Interstate Commerce Act, which section presently provides, in general, that the Interstate Commerce Commission may require railroads to install signaling devices and other apparatus designed to promote safety of railroad operation. The amendments to this section proposed by the bill now under consideration are designed, among other things, to permit the Interstate Commerce Commission to require

that railroads, in appropriate instances, install communication and other devices utilizing radio and radio frequencies.

Bills similar in purpose and content to S. 539 were introduced in the 81st Congress (H. R. 378, H. R. 530, and S. 238) and in the 82d Congress (S. 2356). In commenting on the bills in the 81st Congress, this Commission stated that it was in full accord with the purpose of these bills insofar as their purpose was to further the use of radio as a safety measure in connection with the operation of the Nation's railroads. It was pointed out by the Commission that those bills would have required this Commission to grant the necessary facilities to any railroad which was ordered by the Interstate Commerce Commission to install communications facilities. The Commission suggested that, in order to avoid the possibility of interference between the many users of the available radiofrequencies, and in order to make the most efficient use of those frequencies, carriers should be required to make formal application to the Commission for the use of any proposed radio facilities, and that any license granted for such facilities should be subject to the provision of the Communications Act and the Rules and Regulations of the Commission. Accordingly, the Commission proposed that a proviso be included in the proposed legislation in accordance with the above suggestion.

In commenting on the bills introduced in the 81st Congress, the Commission also suggested that a proviso be added which would make it clear that nothing contained in the legislation would affect the powers of this Commission to inspect equipment utilizing radio facilities that might be installed or railroads. Such inspections would be made pursuant to the provisions of the Communications Act of 1934 and the Rules and Regulations of this Commission.

S. 2356, which was introduced in the 82d Congress, incorporated language to carry out the Commission's suggestions outlined above, and in view of that fact, the Commission stated that it had no objection to the passage of the legislation in that form. The present bill under consideration also contains provisions incorporating the Commission's suggestions and we, therefore, have no objection to the passage of S. 539 in its present form.

The Commission would also like to point out that the amendments to this legislation which were proposed by the Commission, and which are in substance incorporated in the present bill, were coordinated with the Interstate Commerce Commission, and it was understood that they had no objections to their adoption.

FEDERAL COMMUNICATIONS COMMISSION.

Adopted: February 25, 1953.

INTERSTATE COMMERCE COMMISSION,
March 10, 1953.

MY DEAR CHAIRMAN TOBEY: Your letter of January 22, 1953, addressed to the Chairman of the Commission and requesting comments on a bill, S. 539, introduced by you, to authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems, has been referred to our Committee on Legislation and Rules. After careful consideration by that committee, I am authorized to submit the following comments in its behalf:

Section 25, which the bill proposes to amend, now authorized the Commission after investigation, if found necessary in the public interest, to order any rail carrier to install, upon the whole or any part of its railroad, the block signal system, automatic train stop, train control and/or cab-signal devices, and/or other similar appliances, methods, and systems intended to promote the safety of railroad operation. It does not, however, give the Commission any authority with respect to telegraph, telephone, radio, inductive, or other wayside and/or train-communication systems, nor does the Commission have specific power to require any rail carrier to establish, maintain, or observe rules and regulations for the operation of trains in connection with any of the specified devices, appliances, methods, or systems intended to promote safety of railroad operation.

In our annual reports for the past several years, we made the following recommendation:

We recommend that section 25 of the Interstate Commerce Act be amended by making it also applicable to telegraph, telephone, radio, inductive, or other wayside or train communication systems intended to promote safety of railroad operation.

During the year 1951, there were 3,207 persons killed and 22,607 injured in train and train-service accidents. It is obvious that all possible means should be used to reduce this heavy toll.

The practical use of train-communication systems, particularly those employing the principle of radio, to increase safety of operation is, to some extent, still in the experimental stage, but there has been an increasing interest in and an increasing use of such systems in recent years. On January 1, 1951, there were 48 railroads having train-communication systems in service for operation over a total of 40,796 miles of road, and 63 railroads having 178 yard and terminal installations in service. If such communication systems are to be used in any way in connection with the movement of trains, the most reliable equipment obtainable should be used, and it is essential that at all times it should be properly maintained. In several investigations by the Commission of accidents involving collisions between trains, where one or both trains involved were equipped with train-communication systems, it was found that either the type of equipment in service was not reliable or it was not properly maintained.

We believe the Commission should have jurisdiction to order any rail carrier to install such devices, appliances, methods, and systems where deemed necessary to promote safety and to order the rail carrier to establish, maintain, and observe rules and regulations for the operation of trains in connection therewith. If we are given such authority, it would also answer the question which has been raised by some railroads as to the Commission's jurisdiction under the present section 25 of the act to prescribe manual block systems, which systems for the most part consist of operating rules.

The rail carriers have their own operating rules, some of which are related to safety of operation. If the carriers are required to file with the Commission their rules and regulations for the operation of trains in connection with the specified devices, appliances, methods, and systems, we would then be in a position to examine such rules and regulations, look into the question of their adequacy from the standpoint of safety, and determine whether action should be taken with a view to requiring changes or additions.

S. 539 would amend subsection (b) of section 25 by adding "telegraph, telephone, radio, inductive, or other wayside and/or train communication systems" to the list of devices, appliances, methods and systems, the installation of which the Commission may require to promote the safety of railroad operation. Under the present subsection (c) of section 25, the carriers would be required to file their rules, standards, and instructions for the installation, inspection, maintenance, and repair of the systems, devices, and appliances to which the Commission's jurisdiction would be extended. The bill would also authorize the Commission, by order, to require any rail carrier to establish, maintain, and observe rules and regulations in connection with any of the specified devices, appliances, methods, and systems, and would require each carrier to file with the Commission its rules and regulations for the operation of trains in connection therewith.

We are in accord with the purposes of the bill, but wish to suggest several minor amendments for the consideration of your committee.

In the opening paragraph, the reference to the United States Code as to the subsections proposed to be amended is incorrect. The parenthetical matter in lines 4 and 5, on page 1, should read "(49 U. S. C., sec. 26 (b) and 26 (c))," rather than "(49 U. S. C., sec. 26 (a) and 26 (b))."

As the proposed paragraph (b) now reads, it could be construed to mean that the Commission could order a carrier to establish, maintain, and observe rules and regulations for the operation of trains only in connection with the devices, appliances, methods, and systems which the Commission has ordered to be installed, and possibly only in connection with those which the Commission orders to be installed after the enactment of this amendatory provision. As the Commission has required the installation of block signal systems, devices, etc., on less than 10 percent of the total miles of road on which such systems have been installed, such a construction would greatly limit our jurisdiction. We suggest that in line 12, on page 2, after "tion," the words, "in use on the date of the enactment of this amendatory provision or hereafter installed," be inserted therein.

In lines 18 and 19, on page 2, the words, "in use on August 26, 1937, or such systems or devices thereafter installed," might be construed to cover only the systems or devices in use on that date or installed between that date and the date of the enactment of the amendatory provision, but not those installed subsequent to the enactment of the amendatory provision. We suggest that the words, "in use on the date of the enactment of this amendatory provision or

hereafter installed," be substituted for the words, "in use on August 26, 1937, or such systems or devices thereafter installed."

In line 6, on page 4, the word "radio" seems to have been inadvertently omitted before the word "inductive." We suggest, however, that in lines 3 to 7, on page 4, the words, "within six months after August 26, 1937 (or within six months after enactment hereof in the case of telegraph, telephone, inductive, or other wayside and/or train communication systems)," be stricken, and the words, "within six months after the enactment of this amendatory provision," be substituted therefor. Similarly, in line 7, on page 5, we suggest that the words, "after the enactment of this amendatory provision," be substituted for the word , "after the enactment hereof." Except for the addition of the new sentence at the end of subsection (c), we do not believe that this subsection should be amended.

In addition to the amendment to subsection (d) of section 25 proposed in the bill, we suggest that the second sentence of that subsection be amended to read:

"For these purposes *and to carry out the other purposes of this amendatory provision*, the Commission is authorized to employ persons familiar with the subject." [New matter in italic.]

This would insure that the authority would be broad enough to cover the expanded purposes of section 25, as amended by the bill.

We recommend that the amendment proposed in S. 539 be adopted with the suggestions set out above incorporated therein.

Respectfully submitted.

CHARLES D. MAHAFFIE,
Acting Chairman.

COMMITTEE ON LEGISLATION AND RULES,
CHARLES D. MAHAFFIE.
HUGH W. CROSS.

DEPARTMENT OF THE ARMY,
Washington, D. C., March 14, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate.

DEAR MR. CHAIRMAN: Reference is made to your request for the views of the Department of Defense with respect to S. 539 entitled "To authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems." The Secretary of Defense has delegated to this Department the responsibility for expressing the views of the Department of Defense thereon.

The purpose of S. 539 is to strengthen the authority of the Interstate Commerce Commission in directing the installation and use of new and improved communication systems by railroads, in order to provide additional safety of railroad operation. The bill adds certain communication systems such as telegraph, telephone, radio, inductive, or other wayside and/or train communications systems to the safety appliances, methods and systems over which jurisdication is already exercised by the Interstate Commerce Commission under section 25 of the Interstate Commerce Act (49 U. S. C. 26).

The Department of the Army on behalf of the Department of Defense has considered this bill and is in complete accord with its objectives. The Department of Defense is the largest single user of rail transportation in the United States and as such is definitely interested in the promotion of increased railroad safety, particularly for passengers. The Interstate Commerce Commission should lack no authority to require the adoption of any safety measures deemed necessary to promote safety of railroad operation. In considering the installation of safety devices, the value of the safety measures must be weighed against any serious adverse effects on economics and operations, which inevitably would affect users of railroads. It is the view of the Department of Defense that it is proper to entrust to the Interstate Commerce Commission the responsibility of determining the proper balance between costs and safety in railroad transportation.

It may be of some value to the committee to consider the theory that in the long run a more positive and stronger control over moving trains would help bring a more favorable utilization of railroad facilities and equipment with economic as well as defense benefits. Also noteworthy is the fact that improved communication appliances and systems, particularly on moving trains, would provide better protection against sabotage and help to minimize its effects.

The fiscal effects of S. 539 cannot be estimated.

This report has been coordinated among the departments and boards in the Department of Defense in accordance with procedures prescribed by the Secretary of Defense.

Inasmuch as the committee has requested that this report be expedited, it is submitted without a determination by the Bureau of the Budget as to whether it conforms to the program of the President. However, as soon as such advice is received it will be forwarded to your committee.

Sincerely yours,

ROBERT T. STEVENS,
Secretary of the Army

DEPARTMENT OF THE ARMY,
OFFICE OF THE CHIEF OF LEGISLATIVE LIAISON,
Washington, D. C., April 9, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate.

DEAR MR. CHAIRMAN: Reference is made to the letter of March 14, 1953, from the Secretary of the Army to you, expressing the views of the Department of Defense with respect to S. 539, 83d Congress, a bill to authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems.

Inasmuch as the committee had requested that action be expedited, the report was submitted to the committee without a determination by the Bureau of the Budget as to whether it conformed to the program of the President.

This is to inform you that the Bureau of the Budget, on April 7, 1953, advised the Department of the Army that it had no objection to the report submitted to you on March 14, 1953.

Sincerely yours,

WILLIAM J. FLYNN,
Colonel, JAGC, Chief, Legislative Division.
By G. LOVELESS.

THE SECRETARY OF COMMERCE,
Washington, D. C., March 20, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate, Washington, D. C.

DEAR MR. CHAIRMAN: This letter is in further reply to your request of January 22, 1953, for the views of this Department concerning S. 539, a bill to authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems.

The bill would specifically authorize the Interstate Commerce Commission to require railroads under their jurisdiction to install such telegraph, telephone, radio, and other communication devices as the Commission determines to be necessary. The Commission now has similar authority with respect to such equipment as automatic train stops and block signal systems, and also feels it requires rule-making power to secure effective enforcement of such controls.

This legislation is concerned solely with regulatory matters which would be under the jurisdiction of the ICC. This Department has no information concerning the need for this legislation. We believe that the ICC, which is charged generally with regulation of the railroads with respect to safety, will be able to supply your committee with all obtainable data concerning the need for communications devices. We therefore would defer to the views of that agency with respect to S. 539.

Due to the urgency of this matter, we have been unable to obtain the advice of the Bureau of the Budget as to the relationship of this legislation to the program of the President.

If we can be of further assistance to you in this matter, please call on us.

Sincerely yours,

ROBERT B. MURRAY, Jr.,
Acting Secretary of Commerce.

DEFENSE TRANSPORT ADMINISTRATION,
Washington, March 16, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate, Washington, D. C.

DEAR CHAIRMAN TOBEY: Your letter of January 22, 1953, extended on behalf of the Committee on Interstate and Foreign Commerce an invitation to offer any comments I may care to make on S. 539, a bill to authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad-communication systems.

In brief, the bill would amend subsections (b) and (c) of section 25 of the Interstate Commerce Act so as to add to the power of the Interstate Commerce Commission with respect to mandatory installation by rail carriers of block-signal systems and other safety devices the power, after investigation, to order, if found necessary in the public interest, any rail carrier with respect to the whole or any part of its railroad (1) to install telegraph, telephone, radio, inductive or other wayside and/or train-communication systems, and (2) to establish, maintain and observe rules and regulations for the operation of trains in connection with these and other devices, appliances, methods, and systems intended to promote safety of railroad operation now mentioned in section 25 (b). It would amend other provisions in such manner as to implement the exercise of the foregoing authority.

The purpose is to enable the Commission to promote to a greater degree the safety of operation of trains by compelling the installation and efficient use of modern and effective means of train control whenever, after investigation, it is found necessary in the public interest. It would extend the present provisions which afforded an opportunity to carriers and other interested parties for a hearing on the need for such installation and use.

I am in accord with the purpose of the bill. The exercise of the additional authority to be conferred will contribute further toward the maintenance of uninterrupted rail operation so necessary to partial or full mobilization. It will also aid in conserving rail facilities, in effecting maximum use thereof, in expediting train movements, and in saving life, limb, and property.

While some railroads have already, but to a limited extent, installed and are using the devices and methods proposed to be brought within reach of the Commission's powers, enactment of the bill will hasten more extensive adoption and use.

The primary concern of the Defense Transport Administration is to see that the requirements for domestic surface transportation engendered by partial or full mobilization are fulfilled and that the facilities to provide such service are adequate therefor. Since it appears to me that the bill will assist in the attainment of the objectives of this agency, I favor its enactment with such editorial changes as the Commission may suggest.

The Bureau of the Budget has interposed no objection to the submission of this letter.

Very truly yours,

JAMES K. KNUDSON, *Administrator.*

DEPARTMENT OF JUSTICE,
OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, April 8, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate, Washington, D. C.

DEAR SENATOR: This is in response to your request for the views of the Department of Justice concerning the bill (S. 539) to authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems.

The bill would amend section 25 of the Interstate Commerce Act so as to authorize the Interstate Commerce Commission, if found necessary in the public interest, to require any carrier by railroad to install and maintain, in addition to the train and traffic-control devices now provided for under the section, telegraph, telephone, radio, inductive, or other wayside or train communications systems. The bill would also provide that whenever a carrier has been ordered to install a communications system of a type which requires a radio wave band or

frequency, station permit, or license under the Communications Act of 1934, the installation shall be subject to the granting by the Federal Communications Commission of the required authorization, and the operation of such communications systems shall conform with the rules and regulations prescribed by the Communications Commission.

Whether the bill should be enacted involves a question of policy concerning which this Department prefers not to make any recommendation.

The Bureau of the Budget has advised that there is no objection to the submission of this report.

Sincerely,

WILLIAM P. ROGERS, *Deputy Attorney General.*

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington 25, February 2, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate

MY DEAR MR. CHAIRMAN: I have your letter of January 22, 1953, enclosing a copy of S. 539, 83d Congress, entitled "A bill to authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems," and inviting any comments this Office may care to offer concerning the proposed legislation.

Other than the statements contained in House Report No. 1558 on H. R. 378, 81st Congress, and the hearings on S. 2356, 82d Congress, made a part of Senate hearings domestic land and water transportation, (both bills being similar to the instant bill) the General Accounting Office has no further information relative to the proposed legislation. Accordingly, I have no recommendations to make concerning the enactment of S. 539.

Sincerely yours,

FRANK L. YATES,
Acting Comptroller General of the United States.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington 25, April 6, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate.

MY DEAR MR. CHAIRMAN: Reference is made to your letter dated March 23, 1953, enclosing copies of 3 bills, including S. 1401, 83d Congress, and inviting any comments I may care to offer concerning the proposed legislation.

S. 1401 is entitled "A bill to authorize the Interstate Commerce Commission to require carriers engaged in interstate commerce by railroad to install power brakes which comply with specifications and requirements prescribed by the Commission and to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power brakes."

Since the provisions of this bill do not affect the functions of the General Accounting Office, and I have no detailed information with respect to the matter, I make no comments concerning its enactment.

Sincerely yours,

LINDSAY C. WARREN,
Comptroller General of the United States.

STATEMENT OF C. A. MILLER, VICE PRESIDENT AND GENERAL COUNSEL, THE AMERICAN SHORT LINE RAILROAD ASSOCIATION, IN OPPOSITION TO S. 539 AND S. 1401, 83D CONGRESS, 1ST SESSION

Mr. Chairman and gentlemen of the committee, for the record, my name is C. A. Miller. I am vice president and general counsel of the American Short Line Railroad Association, with offices at 2000 Massachusetts Avenue NW., Washington 6, D. C.

Most of you are familiar with the association. However, for the record, the association has 308 members, all of them railroads engaged in interstate and

foreign commerce. In 1951, the latest year for which figures are available the members of our association operated more than 20,000 miles of railroad and employed about 80,000 persons. Compensation of their employees for that year exceeded $525 million. They had an investment in property in excess of $1¾ billion. Their taxes for that year amounted to approximately $90 million.

You have before you, for consideration, two bills, S. 539 and S. 1401. S. 539 would authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems. S. 1401 would authorize the Interstate Commerce Commission to require carriers by railroad to install power brakes and to prescribe rules, standards, and instructions with respect to such brakes. It does not seem necessary to further describe these bills, which have already been discussed on the record.

Ordinarily, the president of our association, Mr. J. M. Hood, would speak in opposition to these bills. However, he is not available and that duty has been assigned to me.

Substantially all of the members of our association would be materially and adversely affected by the enactment of either or both of these bills.

In the first part of my statement, I shall discuss briefly both bills, and will discuss each bill separately a little later on.

Basically, not one of these lines, nor the association, is at variance with the stated objectives of the two bills. Put differently, each of us favors and diligently pursues the installation, proper maintenance and use of communication systems and power brakes providing the maximum possible economy and safety in the movement of persons and property.

The divergence in our views comes from the methods of achieving the objectives. If it be conceded, which I do not concede, that rule by government fiat conceived and initiated by administrators and employees long removed, as a rule, from active participation in the design, manufacture, maintenance or operation of highly technical appliances and devices, can on the average be constructive and productive of the best possible results in the public interest, then the bills should become law.

If, on the other hand, freedom for the thousands of persons engaged in design, manufacture, maintenance, and use of these appliances and devices, who have devoted substantially their entire lives to the particular problems and who are continuing to so apply their energies, will make for more and faster progress toward achieving continually improved appliances and methods, then this committee and the Congress should decline to enact the bills into law.

Historically, the freezing of specifications and instructions for the use of any device, be it simple or complex, has stopped all improvement and, in fact, makes it most difficult for any inventor or research manufacturer to even excite sufficient interest in new devices or improved methods it insure a fair trial of such under conditions encountered in their regular and daily use.

S. 539 would empower the Interstate Commerce Commission to take jurisdiction under the Safety Appliance Act over additional devices defined as telegraphic, telephonic, radio, inductive, and other wayside and/or train-communication systems, including the specifications for the manufacture, installation, maintenance, and use of the enumerated systems.

Beginning at line 8 of page 2, the authority of the Commission to establish, to prescribe, and enforce rules and regulations for the operation of trains in connection with the enumerated devices, is all inclusive. No other method is known for the operation of trains. The effect of the bill, therefore, is to take from management of carriers the right to establish its operating rules, and to transfer that duty to the Interstate Commerce Commission. Unfortunately, the bill does not also transfer to the Commission any responsibility with respect to the economy or success of any of its orders or regulations.

The installation of radio communication by railroads has been progressing at an accelerated rate and the technical meetings of railroad officers and the literature read by them, devote much time and space to outlining how the most benefits may be obtained and how to avoid pitfalls and error.

Contrary to a belief held quite generally by the public, this benefit does not come in the field of dispatching trains. Adequate public service and economic operation are enhanced where radio communication is available. It is not sufficiently reliable nor is it practical or economical to undertake to provide equipment and obtain a sufficient number of exclusively assigned wavelengths to go any further. Intensive efforts are being made all along the line and by every interested person to constantly improve the reliability and economy of the installations. We are convinced that railroad management should not be

shackled with such encompassing powers as it is here proposed to invest in the Interstate Commerce Commission with respect to practically everything of importance in connection with the operation of trains by railroads engaged in interstate commerce.

We urge that the bill not pass.

S. 1401 would empower the Interstate Commerce Commission on its motion or on complaint, to require any or every rail carrier engaged in interstate commerce to install power or train brakes. This power, at least by indirection, is already inherent in the Safety Appliance Act and has been relied upon by the Interstate Commerce Commission to issue a long series of orders having to do with specifications for brakes and the requirement that trains operated be so equipped. However, it is now proposed that the present device standards and practices be frozen, more or less, primarily through the requirements that all rules, specifications, and instructions are subject to Commission order and must be filed with the Commission. Moreover, once filed, these rules, specifications and instructions cannot be changed until such time as the proposed revisions have been filed with and approved by the Commission. It is unlikely that the Commission would seek or welcome authority over so much detail on about 2 million pieces of equipment owned or used by interstate common carriers by railroad.

Historically, American railroads have been the safest in the world and the brake system in use has been a principal contributing factor. Immense strides have been made and continue to be made in all of the elements entering into the brake system, and the inspection, repair, and use of the many devices.

We do not believe this legislation to be necessary, and we urge you to decline to report it out of the committee.

The CHAIRMAN. You may proceed, Mr. Johnson.

STATEMENT OF W. D. JOHNSON, VICE PRESIDENT AND NATIONAL LEGISLATIVE REPRESENTATIVE, ORDER OF RAILWAY CONDUCTORS OF AMERICA

Mr. JOHNSON. My name is W. D. Johnson. I am vice president and national legislative representative of the Order of Railway Conductors. I reside in Washington, D. C., and maintain an office at 10 Independence Avenue. The Order of Railway Conductors was founded July 6, 1868. It is, therefore, the second oldest railway labor organization in the United States. The headquarters of the order is located in Cedar Rapids, Iowa.

I am authorized to appear before this committee and submit this statement in support of S. 539, a bill to amend section 25 of the Interstate Commerce Act to require certain common carriers by railroad to install and maintain communication systems and to establish and observe operating rules, regulations, and practices to promote safety of employees and travelers on railroads, and for other purposes.

Also in support of S. 1401, a bill to authorize the Interstate Commerce Commission to require carriers engaged in interstate commerce by railroad to install power brakes which comply with specifications and requirements prescribed by the Commission and to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power brakes.

S. 539 provides among other things—

That the Commission may, after investigation, if found necessary in the public interest, order any carrier within a time specified in the order, to install the block signal system, interlocking, automatic train stop, train control and/or cab-signal devices, and/or other similar appliances, methods, and systems intended to promote the safety of railroad operation (including telegraph, telephone, radio, inductive, or other wayside and/or train-communication systems) which comply

with specifications and requirements prescribed by the Commission, and to establish rules, regulations, and practides with respect to operation of trains intended to promote safety of railroad operation, upon the whole or any part of its railroad.

S. 1401 provides among other things, that—

The Interstate Commerce Commission may, after investigation, if found necessary in the public interest, order any carrier engaged in interstate commerce by railroad to install power or train brakes which comply with specifications and requirements prescribed by the Commission.

Each common carrier engaged in interstate commerce by railroad shall file with the Commission within 3 months after the enactment hereof its rules, standards, and instructions for the installation, inspection, maintenance, and repair of the power or train brakes covered by this section, and, after approval by the Commission, such rules, standards, and instructions, with such modifications as the Commission may require, shall become obligatory upon the carrier.

The enactment of these two bills will, to some extent, broaden the authority of the Interstate Commerce Commission with respect to safety, but more particularly it will make the rules and regulations of the carriers available for inspection by the ICC and the public. The Commission for the past several years recommended in their annual report legislation such as is provided in S. 539.

Present day high speeds, both freight and passenger, the increase in the length of trains, both freight and passenger, and certain operating changes demand that every precaution possible should be taken to increase the safety of train service employees and the traveling public, hence the necessity of enacting S. 539 and S. 1401.

Safety first has been the chief slogan in the railroad industry for the past several decades and the records will show that many improvements have been made in all departments as a result of the safety-first movement. However, there still remain many improvements that should be promptly made in order to keep step with changed operating conditions.

I am confident that no one will claim that the enactment of S. 539 and S. 1401 will entirely eliminate accidents, or death or personal injury to employees or passengers, but I feel no hesitancy in saying that, it is my honest opinion, the enactment of these two bills will result in a substantial reduction in accidents, deaths, and personal injuries.

I will further say that, in my judgment, had legislation of this character been enacted many years ago, safety in the railroad industry would be at a higher standard than it is today, and many casualties would have been avoided, regardless of the safety-first movement adopted by the railroads.

Present rules are generally adequate for their purpose, but their rules are in many instances disregarded, and in other instances ambiguous or misinterpreted. However, they do not go far enough to insure the employes and the traveling public the safety to which they are entitled.

Therefore, the Interstate Commerce Commission should be granted additional authority to investigate all unsafe operating conditions and issue orders requiring the carriers to make the necessary corrections as provided in S. 539 and S. 1401. This additional authority would be in keeping with the authority already granted the Commission with respect to safety appliances, hours of service, locomotive, and signal inspection.

The Commission has to date administered the Safety Appliance Act, the Hours of Service Act, the Locomotive Inspection Act, and Signal Inspection Act in a very fair and impartial manner. It is, therefore, reasonable to assume that they would administer the provisions of the two bills now under consideration in the same manner and for the future best interest of the carriers, the public, and the employes.

There will be opposition to S. 539 and S. 1401, however, regardless of all opposition that may be submitted, a check of the records will show that all Federal laws that have been enacted to date dealing with safety in the railroad industry, and all ICC orders issued pursuant thereto, have produced a higher degree of safety in train operations. I, therefore, feel perfectly safe in saying that at no time has safety been impaired as a result of the enactment of a Federal law or the issuance of an Interstate Commerce Commission order, rule, or regulation.

Railroading in many departments is a very hazardous occupation, particularly so in yard and road train service. Therefore, the employes engaged in this particular line of work have the right to expect that, in the discharge of their duties, they will be surrounded at all times with the highest possible standards of safety; hence, my appearing before you in behalf of the many thousands of conductors represented by the Order of Railway Conductors in support of S. 539 and S 1401. I most earnestly urge this committee to render a favorable report on these two bills as promptly as possible, and that you leave nothing undone to bring about their enactment in the present session of the Congress.

The CHAIRMAN. Thank you very much.

Mr. JOHNSON. That concludes my statement, Mr. Chairman. I thank you for the opportunity of having appeared before your committee. I have here a letter that I would like to have incorporated in the record following my statement.

The CHAIRMAN. It is so ordered.

Mr. JOHNSON. It is from Mr. Jonas A. McBride, who is vice president of the Brotherhood of Locomotive Firemen and Enginemen.

The CHAIRMAN. I think it is a fair deduction that all the gentlemen here favor this legislation; that is correct, is it not? Well, they will be, before we get through, I am sure.

Mr. JOHNSON. Thank you very much, Mr. Chairman.

(The letter referred to is as follows:)

DEAR SIR AND BROTHER: I have read the statement you have prepared for presentation before the Senate Committee on Interstate and Foreign Commerce, urging passage of bills S. 539 and S. 1041, having to do with safety on the railroads.

I concur in everything you have said regarding these proposals and hereby authorize you to inform the committee that I have authorized you to also speak for me in urging this legislation's enactment, as well as for the Brotherhood of Locomotive Firemen and Enginemen, which organization I represent.

JONAS A. MCBRIDE.

The CHAIRMAN. Our next witness is Mr. See. You may proceed, Mr. See.

STATEMENT OF HARRY SEE, NATIONAL LEGISLATIVE REPRESENTATIVE, BROTHERHOOD OF RAILROAD TRAINMEN

Mr. SEE. For the record, my name is Harry See. I am national legislative representative of the Brotherhood of Railroad Trainmen, with offices at 10 Independence Avenue SW., Washington 24, D. C. The headquarters of the brotherhood are located in the Standard Building, Cleveland, Ohio. We represent brakemen, yardmen, conductors, switchtenders, train baggagemen, and other classes of employees on railroads. The brotherhood has approximately 200,000 members employed in train service in the United States and Canada. Mr. W. P. Kennedy is president of the brotherhood.

The brotherhood supports S. 1401. My testimony only goes to that, and not to the other bill; however, we are supporting the other bill.

All of the men we represent employed on American railroads are directly concerned with the operation and maintenance of power brakes on cars. We have cooperated with the Bureau of Safety of the Interstate Commission for many years in efforts to better or improve the rules governing the installation, inspection, maintenance, and repair of power brakes.

At this point, we would like to suggest an amendment to this bill by adding the word "testing" following the word "maintenance" in the last line of the title, and by adding the word "testing" following the word "maintenance" in line 15 on page 2 of the bill.

We believe the Commission should have the power to prescribe the rules, standards, and instructions for the installation, inspection, maintenance, testing, and repair of such power brakes. If the Commission is to have the authority for the installation, inspection, maintenance, and repair of these brakes, it should also have the power, by congressional action, to make the required tests.

The records indicate that in 1925 the Bureau of Safety of the Interstate Commerce Commission cooperated with a committee of the mechanical division of the Association of American Railroads in the formulation of a code of rules for the maintenance of airbrake and air-signal equipment. These rules have generally been considered by the Association of American Railroads and their train service employees to represent the minimum requirements. However, there is nothing in the rules that requires the adoption of or the enforcement of this code, and there is no provision of law under which their observance can be required.

The reports of the Bureau of Safety show there is considerable nonobservance of these rules. For instance, the Bureau of Safety inspectors, in the fiscal year of 1952, made airbrake tests on 2,661 trains, consisting of 122,214 cars, before their departure from terminals. These trains had been made up in the usual manner by railroad forces and after having been made up were tested by the Commission's inspectors, and they found 5,626 cars with defective or inoperative airbrakes.

If the Commission's inspectors could find these so-called bad-order cars after the trains were made up properly, the inspectors for the carriers should have found them before the trains were made up.

I want to add here, Senator, there is no reflection on the inspectors, but there are just not enough inspectors.

If the Commission's inspectors had not found these cars, no doubt they would have been allowed to depart from the terminal in their defective or inoperative condition. The work of the Commission's inspectors consists merely of a sample or a spot check of the practices followed by the railroads. There are many thousands of trains departing from terminals that the Commission's inspectors never see. I do not know how many thousands of trains were operated by the carriers throughout the United States, but these figures are for only 2,661 such trains.

Representatives of the employee organizations do not sit in with the carriers or the Commission's representatives in the formulation of airbrake maintenance rules, although we understand there has been such a study going on for the past 2 or 3 years. However, to us it does not appear there is any practical solution other than the enactment of legislation giving the Commission specific and definite authority over the matter.

We have reports of many of our members being injured in train service because of airbrake failures or the lack of proper surveillance of operation. As a result, the president of the Brotherhood wrote the chairmen of our committees on certain selected railroads in April 1951, asking to be advised of instances where trains were being permitted to depart from terminals when the air pressure in the trainline was less on the rear end of the train than it was on the locomotive. Responses to this letter came to my office, and were reported to the Bureau of Safety of the Interstate Commerce Commission, with a request that it make inspections.

On less than 30 railroads, hundreds of cases were reported to us where the variation between the pressure on the locomotive and the rear end of the train was more than 10 pounds; in many cases the differential was as much as 45 or 50 pounds. The Commission's records will show it made many investigations and found the conditions to be generally as had been reported to us by men in train service.

When there is a difference of more than 10 pounds in this pressure between the head and rear ends of the train, airbrakes are not very effective and sometimes have no effect at all in the rear end of the train, and this does result in accidents.

The CHAIRMAN. May I interrupt you just a minute? Going back to page 3, in the first paragraph, there is this sentence:

> There are many thousands of trains departing from terminals that the Commission's inspectors never see.

That is a rather strong statement and very impressive to me. Are you quite certain of your ground there?

Mr. SEE. Yes, the Commission's inspectors only make spot checks. I can't tell you how many there are. There aren't many. They cover the entire United States.

The CHAIRMAN. They go out without any inspection whatever?

Mr. SEE. The company inspectors, but not by the ICC.

The CHAIRMAN. Thank you.

Mr. SEE. Our members also report to us that there are many instances when carriers permit trains to depart from a terminal without proper airbrake tests, and some of these instances have been reported to the Commission. The reports of the Bureau of Safety indicate that the Bureau inspectors have found many such instances, but there

is nothing under the law that permits the Commission to enforce the existing rules requiring such inspections and air tests.

In many train-service accidents, the Commission conducts investigations, and in some of them a report of the accident is issued; anyone who desires it can obtain a copy from the Commission. In checking through these reports, and I am not sure if this is a complete list or not, we have found during the last 5 years the Commission has investigated 8 accidents caused by the failure to enforce rules pertaining to inspection, maintenance, or use of airbrake systems, as follows:

Report No.	Date	Railroad	Location	Kind of accident	Brake condition involved
3132	Sept. 30, 1947	P. R. R.	Scio, Ohio	Collision	Inadequate airbrake maintenance and tests.
3218	Dec. 3, 1948	A. C. L.	Ben Hill, Ga.	do	Improper repairs and maintenance.
3361	Sept. 1, 1950	P. R. R.	Jewett, Ohio	do	Retain valve in freight service position on train consisting of 2 Diesel units and caboose.
3420	Nov. 27, 1950	A. C. L.	Screven, Ga.	do	Failure of brake system; cause not ascertained.
3456	Dec. 14, 1951	D. S. S. & A.	L'Anse, Mich.	Derail	Inadequate tests and improper operation.
3462	Apr. 23, 1952	Utah	Jacobs, Utah	do	Inadequate tests.
3501	Dec. 26, 1952	T. R. R. of St. Louis; Wabash.	St. Louis, Mo.	Collision	Inadequate tests. Closed angle cock.
Ex parte 184.	Jan. 15, 1953	Washington Terminal.	Washington, D. C.	Derail	Angle cock accidentally closed, due to improper application.

The CHAIRMAN. Of very dismal memories.

Mr. SEE. We can be thankful it was not much worse than it was. These accidents resulted in the death of 5 persons and the injury of 254 persons. While it is impossible to anticipate all of the conditions and practices that may be encountered, it cannot be questioned that adequate airbrake rules, standards, and instructions for systems, properly enforced and obeyed, would bring about the correction of many of the airbrake irregularities disclosed in these accident reports. Copies of these reports can be secured by this committee from the Commission.

Legislation is needed to correct these conditions. The railroads, collectively, through the Association of American Railroads, have failed to bring about the general adoption and enforcement of satisfactory rules for maintenance and testing of airbrakes. Railroads individually cannot do so. Because of the interchange of cars throughout the country, the necessary improvements cannot be realized unless the higher standards of maintenance are placed in effect on all railroads. The failure on the part of many railroads to comply with even the present minimum requirements places an intolerable burden on the few roads which endeavor to comply in full with the requirements of the present rules. Full compliance on the part of all railroads would eliminate unreasonable burdens since the design of modern power brake systems is such that once the equipment is placed in proper condition, only a relatively small amount of maintenance is then necessary to keep such equipment in proper operating conditions.

The proposed legislation would be in the interest of public welfare, not only by promoting safety, but in bringing about substantial increases in efficiency which would far outweigh the costs involved.

During the past several years, particularly during winter weather, many railroads have encountered serious delays at terminals, and in many locations reduction in train length has also been necessary in order to obtain even the minimum percentage of braking power required for safe operation. It is possible, by proper maintenance practices, to reduce terminal delays to trains and to avoid drastic reductions in permissible train length.

We urge the committee to take favorable action on this legislation as promptly as possible, so that new rules can be placed in effect and proper enforcement brought about. We are sure this will prevent many needless accidents.

Senator SCHOEPPEL. I would like to ask you a question. I take it that there are rules and regulations already established?

Mr. SEE. That is correct.

Senator SCHOEPPEL. I note you say, on page 4, that there are trains permitted to depart from terminals without proper airbrake tests. Now, there are rules already established, are there not, for testing airbrakes?

Mr. SEE. Yes, sir.

Senator SCHOEPPEL. A failure to test properly could be a human failure; it couldn't be a mechanical failure?

Mr. SEE. There are reports from our people where there are no tests made, where there are no car testers on duty.

Senator SCHOEPPEL. You think the matter would be changed if they put on sufficient inspectors to test these?

Mr. SEE. It would help.

Senator SCHOEPPEL. Don't you generally find that the builders of the modern equipment on railroads now, engineered to a high degree of perfection, that under good operating conditions, or normal operating conditions, they run checks and tests beforehand to see whether they have any bugs in them and, generally speaking, it is a matter that is technical in nature, sometimes, as to this new equipment; is it not?

Mr. SEE. You are referring to passenger equipment?

Senator SCHOEPPEL. Yes.

Mr. SEE. I think you are probably correct. The thing we find the most trouble with is freight trains.

Senator SCHOEPPEL. Going to that, rules and regulations have been established requiring inspection and air tests on that. I just look at it from this standpoint: If we have rules and regulations, it is somebody's business to follow them. Would they follow them any more religiously if they had the Commission ordering that they be followed than they would if they were established as an operating condition?

Mr. SEE. I think they would, Senator, because there would be a penalty involved if they violated the rule of the Commission.

Senator SCHOEPPEL. Would that go to the individual or the railroad?

Mr. SEE. To the carrier. It does in all cases, and I assume it would in this.

Senator SCHOEPPEL. If the equipment was on the train, if it met good engineering standards, and if the inspector failed to check it, then it would go to some kind of a human failure there, or lack of inspectors to do it; would it not?

Mr. SEE. Senator, let me state it this way: Suppose we have a freight train of 90, 100, or 110 cars made up in the yard ready to go. The air pressure in the train line on the engine, the locomotive, is 80 pounds, or whatever the rule might require in that particular railroad, but on the caboose there is only 50 or 60 pounds of air. There is a differential of 15, 20, 25, or 30 pounds. I have records of it being as much as 50 pounds, that trains do, in many instances, leave town that way, and no one does anything about it, and there is no penalty involved if they do. That is because of poor maintenance or a leak in the line. You have walked along a train and heard the hissing of air. That is due to a leak in the pipe or hose. Maybe it is a faulty hose. If it is a faulty hose, it may blow out and stop the train, or it may cause a wreck.

If there is a 10- or 15-pound differential of air between the head end of a 100-car train and the rear end, there is no application on the rear end at all.

Senator POTTER. None at all?

Mr. SEE. No.

Senator SCHOEPPEL. I don't profess to be an expert. I am a novice of the rankest sort on this. That is why I am interested in your views.

Mr. Johnson, who preceded you, testified in relation to another bill. I took it, in another phase of his discussion, that he wanted rules established as to where the equipment was to be placed. I am wondering if that would be a good rule with reference to good engineering practices, and if it might not work a terrific hardship on readjusting to some technical placing of this type of equipment without proper, adequate time limit being given to readjust to it.

Mr. SEE. I think Mr. Johnson's testimony had to do with S. 539, which is the signal bill.

Senator SCHOEPPEL. Yes, I say, with the other bill. These two are being heard together. After all, they do tie into one common purpose, the safety factors, and the Commission's right and authority to establish rules and regulations as to this type of equipment and how it should be operated, I take it.

You say here that the rules and regulations have been violated. Could you furnish some more specific instances? I am not going to ask you to do it today. Could you furnish some more specific instances of what your analysis has been with reference to those conditions?

Mr. SEE. I can furnish you with quite a large list of the trains. I think I can give you the train number, the date, and the location where there has been an excessive 10-pound variation in the air pressure in the train line between the head and rear end. I think I can give you the result of the Commission's investigation of a large number of those. It will take a little time to accumulate them, because it is quite a large file. I will be glad to do it for the committee, if you request it.

Senator SCHOEPPEL. I do not want to be unduly burdensome on that score. I think it would be helpful if you were specific in some of these instances. Then we could compare what the present rules require, over what the results have shown them to be. It might be helpful to us as to what type of legislation we would want to finally enact to authorize the Commission to take in regard to these remedial changes.

Mr. SEE. How soon would the committee want such data?

Senator SCHOEPPEL. I may be the only member of the committee that is interested in it. I am no technical expert on it. It would be helpful to me if I had it this week, the coming week.

Mr. SEE. Sometime next week?

Senator SCHOEPPEL. Yes.

Mr. SEE. I can get it for you, Senator, I would say, from about 15 railroads.

Senator SCHOEPPEL. That would be sufficient.

Mr. SEE. The east, west, south and central part of the country, divide them up, several instances on each one of the railroads, and following right through to the Commission's inspections on those railroads. I can do that by sometime next week.

Senator SCHOEPPEL. Thank you.

Senator POTTER. Mr. See, I am sorry, I came in while you were in the middle of your statement. The accident that occurred at L'Anse, Mich., was that due to brake failure?

Mr. SEE. I didn't bring those reports. Senator, I will be glad to get you one.

Senator POTTER. If I recall that correctly, I believe there was a death involved there.

Mr. SEE. There were deaths in some of these. There was a total of 5 people killed, and 254 injured in these cases I reported. I will be glad to send you a copy of 3456, Senator. The Commission gave as a reason, "inadequate tests and improper operation."

Senator POTTER. I assume that would be of the braking system?

Mr. SEE. Yes.

Senator POTTER. I recall that, when hearings were held after the disaster down here at the Washington Terminal, testimony was given that the brakemen in the caboose——

Mr. SEE. The rear car.

Senator POTTER. Couldn't hear the whistle of the engineer. I don't know whether you are willing to testify on that score, but it always seemed to me that you could have a better signal system, certainly, from the engineer to the rear cars. Are you familiar with that testimony that was given?

Mr. SEE. I read it; yes. As I remember, there were about 20 cars in that train.

Senator POTTER. That is right. Isn't it the common practice, in case you have a runaway engine, that the engineer give some type of signal with the whistle to notify the people that he has a runaway train?

Mr. SEE. Of course, the signal for an instance of that kind is a series of short blasts on the whistle. That is an indication to the train crew that they are to apply the brakes or that the brakes are inoperative, and to use the hand brakes.

I don't remember the testimony of that rear brakeman in that case, except to the effect that he said he didn't hear the whistle. If he was inside that rear car, and he was probably almost a quarter of a mile away from the locomotive if there were 20 cars, it is possible that he didn't hear the whistle.

Senator POTTER. Mr. See, don't you think there should be a better system, intercommunication system, between the engine and the rear cars?

Mr. SEE. It would be fine if there was, Senator.

Senator POTTER. That shouldn't take a great deal of engineering know-how. I shouldn't think it would be too expensive, and it seems to me it would be very desirable.

Mr. SEE. I think it is entirely possible. I wouldn't know about the expense. A train like that, which is very seldom broken, there is no switching done with it, it wouldn't be much of a job. I don't know about that. But a train where it is switched frequently, there would be some job in the connecting of the cars for a communicating system.

Senator POTTER. If that happened in this case, if the man in the caboose had heard it, the chances are he could have done something about it and avoided the accident?

Mr. SEE. If, in this particular case, where the angle cock was closed, and if there was any air in the reservoir in the rear end, he could have used the air. If there was any air there or not, I don't know.

As far as the use of a hand brake on 1 or 2 cars, which would have been all they could get to, it would have made very little difference in the speed of the train, because he couldn't have gotten to more than 1 or 2 at the most.

The CHAIRMAN. We thank you very much for appearing.

APRIL 23, 1953.

Hon. ANDREW F. SCHOEPPEL,
Senate Office Building, Washington, D. C.

DEAR SENATOR SCHOEPPEL: When I appeared before the Senate Interstate and Foreign Commerce Committee on April 14, testifying in support of S. 1401, you asked me to furnish you with some data concerning the statement I made relative to air pressure in the train line on freight trains.

I told you I would select a few railroads and furnish you with the data we secured from the reports we received, and the information from the Bureau of Safety of the Interstate Commerce Commission following its investigation. You stated that would be satisfactory.

Facts on the various railroads follow:

Union Pacific Railroad

We reported to the ICC differences in the train line at Montpelier, Pocatello, Glenn's Ferry, Idaho; Green River, Cheyenne, Wyo.; Salt Lake City, Ogden, Utah; Huntington, Oreg.; Sidney, Hastings, Grand Island, North Platte, Nebr.

On July 17, 1952, the ICC advised that between September 18, 1951, and May 15, 1952, its inspectors checked 39 trains at the above-mentioned terminals, and found 5 cases where the difference in the train line between the head and rear end exceeded 10 pounds, the maximum differential being 18 pounds.

Atchison, Topeka & Santa Fe Railway

We reported to the ICC differences in the train line on the Missouri division, Illinois division, Panhandle division, Eastern division, New Mexico division, and the Middle division. On May 8, 1952, the ICC advises that between July 19 and December 7, 1951, its inspectors checked 159 trains and found 12 cases where the difference in the train line between the head and rear end exceeded 10 pounds, the maximum differential being 19 pounds.

Milwaukee Road

We reported to the ICC differences in the train line at La Crosse, Wis.; Marquette, Green Island, Dubuque, Iowa; River Junction, Minn.; Savanna, Faithorn, Ill.; Terre Haute, Bedford, West Clinton, Ind.

On May 9, 1952, the ICC advised that between August 6, 1951, and January 10, 1952, its inspectors checked 79 trains at the above-mentioned terminals and found 11 cases where the difference in the train line between the head and rear end exceeded 10 pounds, the maximum differential being 20 pounds. The Commission further advised that during these investigations several cases were observed in which train brake tests were improperly made.

Chicago & North Western Railway

We reported to the ICC differences in the train line at Tracy and Waseca, Minn.; Clinton, Iowa; Proviso, Ill.; Butler, Wis.

On May 9, 1952, the ICC advised that between August 24, 1951, and February 13, 1952, its inspectors checked 35 trains at the above-mentioned terminals, and found 12 cases where the difference in the train line between the head and rear end exceeded 10 pounds, the maximum differential being 30 pounds.

Baltimore & Ohio Railroad

We reported to the ICC differences in the train line at Parkersburg, Benwood Junction, Fairmount, Holloway, Keyser, Monongah, Haywood, W. Va.; Willard, Ohio; Hagerstown, Cumberland, Md.

On May 9, 1952, the ICC advised that between July 18 and October 17, 1951, its inspectors checked 43 trains at the above-mentioned terminals, and found 5 cases where the difference in the train line between the head and rear end exceeded 10 pounds, the maximum differential being 21 pounds.

Norfolk & Western Railway

We reported to the ICC differences in the train line at Williamson, W. Va.; Portsmouth, Ohio.

On May 9, 1952, the ICC advised that between July 17 and October 4, 1951, its inspectors checked 20 trains at the above-mentioned terminals, and found 12 cases where the difference in the train line between the head and rear end exceeded 10 pounds, the maximum differential being 29 pounds.

New York Central System

We reported to the ICC differences in the train line at various terminals. On May 9, 1952, the ICC advised that between July 31, 1951, and March 6, 1952, its inspectors checked 19 trains at 6 different terminals and found 6 cases where the difference in the train line between the head and rear end exceeded 10 pounds, the maximum differential being 28 pounds.

Pennsylvania Railroad

We reported to the ICC differences in the train line in the vicinity of Altoona, Enola, and Harrisburg, Pa. On May 12, 1952, the ICC advised that between July 23, 1951 and August 6, 1951, its inspectors checked 28 trains and found 6 cases where the difference in the train line between the head and rear end exceeded 10 pounds, the maximum differential being 20 pounds. The Commission further advised that during these investigations several cases were observed in which train brake tests were improperly made.

In summary, the Interstate Commerce Commission checked 422 trains at terminals on the railroads shown above, and found 69 of them to have a variation in the train line pressure at opposite ends of the trains of more than 10 pounds, or a percentage of 16 percent.

In all of these cases the Commission inspectors have no authority at present to require the carriers to change this condition. The enactment of S. 1401 would give them this authority.

My kind regards.

Respectfully,

HARRY SEE.

Our next witness will be Mr. Thomas L. Preston, general solicitor, Association of American Railroads.

STATEMENT OF THOMAS L. PRESTON, GENERAL SOLICITOR, ASSOCIATION OF AMERICAN RAILROADS

Mr. PRESTON. My name is Thomas L. Preston. I am general solicitor of the Association of American Railroads with headquarters at Washington, D. C. The Association of American Railroads is a voluntary nonprofit organization. Its membership comprises railroads which operate 97.5 percent of the total road mileage of all class I railroads in the United States and produce 96.5 percent of the gross revenue of all class I railroads.

With your permission, I should like to speak first with respect to S. 1401, which we speak of as the brake bill.

It is understood that the immediate occasion for the introduction of this bill is the accident at the Union Station in Washington on

January 15, 1953, which the Commission in its report, ex parte No. 184, dated February 17, 1953, attributed to the fouling of an angle cock by reason of insufficient clearance permitting intermittent contact with cross members of the underframe resulting from the movement of the car.

The CHAIRMAN. Would you mind my interrupting you there? In the first sentence of that paragraph you state the reason for the introduction of this bill was the accident at Union Station. I don't think that is quite correct. That was a contributing factor as to an indication of how the committee feels about this. It stimulates interest in this matter, but this legislation is old stuff. Senator Johnson of Colorado sponsored legislation on this. We had long hearings in the past. It is a continuing matter with us and will be until we get some results from this.

It wasn't because of this at all. It aroused our indignation. I wanted to correct that statement.

Mr. PRESTON. I stand corrected, Mr. Chairman. I only meant to indicate our understanding, that the immediate occasion for the suggestion of the Interstate Commerce Commission coming into this, that this bill be introduced at this time did relate——

The CHAIRMAN. Had there been no accident at Union Station, I think the legislation would have come up at the same time, almost concurrently.

Mr. PRESTON. However, since the Union Station accident, as I say, Mr. Chairman, it does have at least a collateral bearing upon the introduction of S. 1401. It is believed that this committee will be keenly interested to know what was immediately done by the railroads to prevent a recurrence of such an occasion.

In that connection I would like to read a memorandum on that point which is attached to my statement following page 5. It is a brief memorandum by the mechanical division of the Association of American Railroads showing action taken by the railroads following the accident at the Union Station, Washington, D. C., on January 15, 1953.

This, you will understand, is not my language. It is from the mechanical division of the Association of American Railroads:

> Upon being advised by the chief mechanical officer of the Pennsylvania Railroad by telephone on January 26, 1953, and followed by letter dated February 16, 1953, to numerous chief mechanical officers of other railroads as to the possible cause of the Washington Terminal accident, the railroads immediately took action to check all railroad passenger cars on their lines and make such corrections as were necessary in order to insure that under the most extreme conditions possible, ample clearance between the angle cock and any fixed parts of the car or appurtenances is provided. This action was taken prior to the receipt of ex parte report No. 184 of the Interstate Commerce Commission dated February 17, 1953—

that being the Commission's report with respect to the accident. That last phrase was my own language.

> A letter was sent from the mechanical division office of the Association of American Railroads under date of February 26, 1953, to the voting and associate members of the mechanical division calling attention to the findings of the Commission in its *Ex parte No. 184* and the recommendations of the Commission. Under date of March 3, 1953, the chief mechanical officer of the Pennsylvania Railroad who is also chairman of the mechnaical division of the Association of American Railroads called attention to the fact that study should be made of manual plate E–76A of the Manual of Standard and Recommended Practice

covering location of steam and air connections for new passenger cars equipped with AAR tightlock couplers.

As a result of this, a meeting of the joint committee on the subject of the location of steam and air connections on passenger cars equipped with tightlock couplers was called to be held in Chicago on March 18, 1953. This matter was referred to the committee on brakes and brake equipment at their meeting held March 19 and 20 and the committee on car construction at meeting held March 31 and April 1, 1953. Each of these committees approved the action taken by the joint subcommittee, that is, revision manual plate E–76A to insure clearance under most extreme conditions possible.

The executive vice chairman of the mechanical division of the Association of American Railroads, wrote Commissioner Patterson under date of March 4, 1953, outlining action of the mechancial division of the Association of American Railroads with respect to the conditions found on passenger equipment involved in the Washington accident and requested his comments thereon. The Commissioner responded under date of March 16, 1953, as follows—this is quoted from Commissioner Patterson's response:

"The recommended practice of the mechanical division covering the location of steam and air connections for new passenger cars equipped with tightlock couplers, as shown on page 76A–1947, section E, of the manual, shows only the recommended location of the connections in relation to each other and to the centerline and pulling face of the coupler. These locations apparently were established to permit the use of standard air hose and steam connectors. It is my view that this practice should be revised to require sufficient clearance to permit these connections to move vertically, laterally, and longitudinally with the coupler body without coming in contact with some other portion of the car, and that such revised recommended practice be made a standard requirement not only for new passenger cars but for all cars equipped with tightlock or similar type couplers."

The executive vice chairman then wrote Commissioner Patterson under date of March 18, 1953, that meetings were being held that day to take action to permit these connections to move vertically, laterally, and longitudinally with coupler body without coming in contact with some other portion of the car and that this will be made a standard practice of the association not only for new passenger cars but all cars equipped with tightlock or similar type couplers. This recommendation will be contained in the reports of the committee on car construction and the committee on brakes and brake equipment.

In accordance with past practices the recommendations as submitted above will be accepted by the member roads and enforced through the interchange rules agreement.

The CHAIRMAN. May I point out to you, sir, that in Mr. See's testimony, page 6 thereof, he states:

The railroads, collectively, through the Association of American Railroads, have failed to bring about the general adoption and enforcement of satisfactory rules for maintenance and testing of airbrakes.

That would seem to contravene what you have already done.

Mr. PRESTON. It would indicate that Mr. See and I are not in entire agreement.

The CHAIRMAN. The positive action you have taken here would seem to controvert that?

Mr. PRESTON. I would say so.

The individual railroads have not awaited revision of the manual before taking corrective action. They immediately set about the relocation of angle cocks on all passenger cars in service where there was any possibility of fouling by reason of insufficient clearance. The fact is that this corrective action is today approaching the point of completion throughout the entire country.

Senator POTTER. Could I ask a question at that point, Mr. Chairman?

The CHAIRMAN. Yes.

Senator POTTER. Why did you limit it to just passenger cars?

Mr. PRESTON. The reason for the limitation to passenger cars, Senator, is that the device involved to which was attributed the

accident at the Union Station had to do with installations on passenger cars which, although by no means am I a mechanical expert, I understand to be quite different in character and location from those that are installed for freight cars.

Senator POTTER. Apparently they gave no assurance to Commissioner Patterson that the brake coupling, whatever you call it, the angle cock—is that what it is termed?

Mr. PRESTON. Yes.

Senator POTTER. Had the clearance that he required for freight cars. As you say, you assumed it is a different problem?

Mr. PRESTON. There seemed to be no occasion for that. With respect to freight cars, the brake installations are known as A. B. brakes. Commissioner Patterson has been intimately in contact with the railroads for a long time, having to do with a program for replacement of less efficient brakes heretofore used with the improved A. B. brake, which I am given to understand is at present the best available brake to be had for use on freight trains.

A point about that memorandum I have read in connection with S. 1401 is that it seems to indicate clearly to me that corrective action was taken by the railroads themselves and upon their own initiative, independent of any regulatory action, and was inaugurated in advance of the report of the Commission with respect to the Washington Terminal accident.

I might say I am back on my prepared statement, Mr. Chairman, at the top of page 2.

Senator JOHNSON. May I ask the witness a question?

The CHAIRMAN. Certainly.

Senator JOHNSON. Have the railroads done anything in the way of special instruction to the baggagemen, to the trainmen, to the porters, and the conductors who ride these trains? It is a strange thing that with this runaway train, when even the passengers knew the train was running away, nobody pulled the brake cord.

Have you given special instruction to correct the delinquency that occurred on that train?

Mr. PRESTON. Senator Johnson, I will have to ask your permission to learn the answer to that question. I am not able to answer it now.

Senator JOHNSON. I would like to have you ascertain the correct answer to that question and put it in the record.

Mr. PRESTON. I will be glad to do that.

Senator JOHNSON. It was not only a mechanical defect discovered there but there had to be a personnel failure also.

Mr. PRESTON. I will undertake to learn the facts in that regard and have them inserted in the record.

(The material referred to is as follows:)

Subsequent to the above inquiry, Mr. P. M. Shoemaker, president of the Delaware, Lackawanna & Western Railroad Co., testified at page 125 of the typewritten transcript as follows:

"As a result of that accident, the Lackawanna, and many other railroads, I know, put out immediate instructions to train servicemen requesting them to reexamine their own sense of responsibility for knowing when a train was going too fast, for taking action themselves to pull the emergency cord, and to put on the brakes, as every trainman knows how to do and is instructed how to do under our rules."

The Lackawanna instructions referred to by Mr. Shoemaker were issued by the general superintendent of that company under date of March 2, 1953, to

divisional superintendents and were immediately bulletined to all train and engine service employees. The instruction read as follows:

"A train accident occurred recently on another railroad which caused a number of personal injuries to passengers as well as considerable damage to property.

"Investigation brought out that the accident could have been prevented had the members of the traincrew been alert enough to realize that the train was being operated in excess of its usual and normal speed at the point involved. They could have pulled the emergency cord and stopped the train.

"This is brought to your attention to illustrate that safety is of the first importance in the discharge of duty and crew members should always be alert to detect unusual conditions, be familiar with the location and use of emergency devices and be prepared to promptly take action to protect against accidents under emergency conditions."

Inquiry develops that the railroads quite generally analyzed carefully the report of the Interstate Commerce Commission in *Ex parte No. 184* as it related to personnel failure as well as angle-cock location and circularized their supervising officials and safety officers with respect thereto, to the end that the train servicemen under their jurisdiction be fully acquainted with what had occurred, alerted to their responsibility in the event of a like occurrence on their own railroad and make sure of their knowledge with respect to the location and character of the emergency brake application facilities upon the various types of equipment in use.

Mr. PRESTON. I wish to register the unqualified and vigorous opposition of the railroads to this bill, on the ground that there is no occasion for its enactment. We submit that the committee should abstain from hasty action upon proposed legislation under the urge of an isolated mishap, no matter how much to be regretted and how spectacular in character. The sound approach to consideration of such a measure as this is to inquire whether there be occasion for it—such as those referred to in Mr. See's statement—not in the light of a single incident, or a few scattered incidents, but rather in the light of the overall performance of railroad brakes, and the fact is that nowhere in the field of appliances affecting safety is there so little need for reposing additional authority in the regulatory body.

We are all naturally shocked by such an occurrence as the wreck at the Union Station and it is perhaps not unnatural that the immediate reaction should be, let us pass a law—let us have more regulation. But the true significance of particular occurrences in relation to the need for new legislation can be ascertained only against the background of overall performance, for no law and no amount of regulation will ever succeed in the total elimination of occasional mishaps.

We urge that in appraising the question whether occasion exists for the passage of this bill, the members of the committee keep constantly in mind the fact that the railroads of this country, year in and year out, operate each day on the average more than 95 million car-miles per day and more than 2½ million train-miles per day.

These figures are based on the performance over the 7 postwar years, 1946–52. The division as between freight trains and passenger trains is as follows: Freight-car miles, over 85 million per day; freight-train miles, 1.5 million per day; passenger-car miles, over 10 million per day; passenger-train miles, over 1 million per day.

The committee should also keep in mind that this prodigious daily service is performed over the entire expense of this country regardless of conditions of terrain, weather, and density of traffic, and yet throughout the 7 year postwar period, 1946–52, not a single passenger and only four employees lost their lives in an accident attributable to brake failure.

It is impossible to say how many brake applications are involved in the daily performance just described but it is obvious that the figure would stagger the imagination. Against the background of the overall performance described, the railroads submit that there is no occasion whatever for the enactment of S. 1401. We believe that additional regulation should be imposed upon the railroads only where there is a clearly demonstrated present need and we submit that in the whole field of railroad operation nothing presents less occasion for new legislation than the matter of railroad brakes.

Now, Mr. Chairman, that completes my prepared statement with reference to S. 1401. I would like, however, to say this in addition. You will recall this bill was introduced as late as March 20, only 3 weeks ago, and you will appreciate that, of course, in an industry such as the railroad industry is, embracing the entire territory of the United States, with the headquarters of individual railroads scattered throughout the country, it takes time to develop the views of the industry, to determine whether a complete hearing shall be sought on any given piece of legislation, to prepare the necessary material, ascertain the facts, and procure suitable and qualified witnesses.

Now, the restricted period which has elapsed since the introduction of this bill has hardly permitted us to do that. We should appreciate, if it comports with the possibilities of the committee's other responsibilities and engagements, an opportunity either to be heard more fully at some later date with respect to this bill or, at the least, we have permission to file a more complete and elaborate statement with respect to the bill.

The CHAIRMAN. The permission to file a more complete statement in the record is gladly granted.

Senator POTTER. Could I ask a question?

The CHAIRMAN. Yes.

Senator POTTER. Is your opposition to the bill based upon the cost involved to the railroads or upon granting the Interstate Commerce Commission more regulatory power?

Mr. PRESTON. Senator, the cost factor, of course, is always present. The railroads, in the position they are in, endeavoring under regulated rates to realize sufficient earnings for the overall upkeep and safe operation of their properties, are, of course, concerned with the cost factor.

I would not say, however, that the cost factor is the main or by any means the most important thing we have in mind with respect to this bill, but rather the other feature to which you refer, namely, the position that the regulatory powers of the Commission should be expanded and extended only where there is a clearly demonstrated present need for such expansion.

We say with respect to the matter of railroad brakes that today there is no evidence of such present need.

The CHAIRMAN. Was your question, Mr. Potter, as to the cost factor?

Senator POTTER. Yes.

The CHAIRMAN. And his answer was?

Senator POTTER. And his answer was that it was a factor, but not the most important factor.

Do you have any idea of the additional cost that there would be, percentagewise, put on the railroad?

Mr. PRESTON. I should say there is no way of knowing as to that. If you afford to the Commission the power which this bill would afford it, the amount of the cost involved would be a matter entirely within the province of the Commission, for it would relate to what the Commission might prescribe.

So far as the power of the Commission under this bill is concerned, it could bankrupt every railroad in the country, I suspect.

The CHAIRMAN. You wouldn't mean that. You don't mean to leave that statement in the record?

Mr. PRESTON. I say, as a matter of power, Mr. Chairman; I don't say that the Commission would.

The CHAIRMAN. You mean, installing these devices would bankrupt the railroads of the country?

Mr. PRESTON. I say it would be possible under this bill for the Commission to require installations of such an enormously expensive character that it would bankrupt—I will modify my statement—many railroads of the country and imperil most of them.

The CHAIRMAN. Now, Mr. Preston——

Mr. PRESTON. It is a matter of power. Our position is that from the standpoint of legislation the measure should be the degree of the power granted, and that the protection against an abuse of power ought not to be left entirely to the confidence you may have in the benignancy which might be a part and parcel of the administration of that power.

It is the existence of power that affords the opportunity for abuse, and its is in the existence of power that the danger lies.

Senator POTTER. I would assume, however, that one of the prime objectives of a regulatory Commission would be to see that proper safety factors were not only installed but were maintained. A regulatory Commission in itself necessitates the granting of certain powers.

As long as the Commission has those regulatory factors, as one individual, without being too familiar with the problem, it would seem to me that certainly the matter of safety in the public interest is one of the prime objectives of the Commission.

Mr. PRESTON. Well, Senator, of course, the Commission does now have and has long exercised extensive powers with respect to the matter of railroad safety under the Boiler Inspection Act, the Safety Appliance Act and the provisions of section 25 of the Interstate Commerce Act.

Our point with respect to this bill is that it is designed to extend that power further and into a field where there is no occasion for it. That is our point.

Senator POTTER. Well, apparently there is a conflict between your testimony and Mr. See's testimony, where he cited some examples and, I believe, stated to Senator Schoeppel that he would submit to the committee other examples where lack of inspection has taken place.

I am sure you can appreciate also—I am thinking now of the railroads' interest; they are in a competitive field—your public relations are not best when accidents occur such as occurred here at the Washington Terminal. It is not a good selling point for the railroads.

I would assume that, and I am sure it is so, the railroad industry itself is as greatly concerned about the safety problems as the Commission, we, or the people who are presenting the public interest.

The approach that is taken has always distressed me more than some other things. I think a positive approach should be taken and say, "Certainly, we want to have the safest railroads possible," rather than to say, "We oppose this legislation."

I don't know whether the legislation is good or bad. But it always brings up the question in my mind as to why in the world they are opposing it.

Mr. PRESTON. Senator, I am glad you interrogated me along that line, because I welcome an occasion to make clear to this committee, with all the emphasis I know how, that no body of men in this country has or could have so great a motivation to forward the safety of railroad operation as those who are responsible for the operation themselves in railroad management.

The CHAIRMAN. It ought to be elementary.

Mr. PRESTON. It not only ought to be, Mr. Chairman, but it most emphatically is.

From every point of view that is true. Of course, the human sorrow and regret, Mr. Chairman, that every decent human being is bound to feel with respect to casualties that result from deaths and injuries of passengers and employees is shared by the railroad people, along with all other decent human beings. But when you consider that the operations of the railroads, that the managements of the railroads are responsible for these operations, accountable for the consequences of these accidents, and suffer all of the bad results with respect to publicity and public relations to which you refer, I submit that you cannot find anywhere in this country a group of people so powerfully motivated to forward safety of operation on the railroads as the operating officials of the railroads themselves.

It is generally true, I think, Mr. Chairman, with respect to any very large further impingement of regulatory power into the field of railroad operation that the railroads have resisted and continue to resist. But why do they do that?

They certainly are not activated by a wish that the railroads be operated less safely than they otherwise might be. They are activated by their profound conviction that a division of responsibility in the field of railroad operation between the railroad officials who are accountable in the premises and experienced in the premises, and grew up in the operation, a division of authority between them, on the one hand, and the regulatory bodies sitting in Washington, on the other hand, will not promote safety of operation but will have the opposite result and tend to a division of responsibility, a weakening of the railroad initiative and enthusiasm, and an overall deleterious effect upon railroad safety.

It is from that point of view that you find us so often resisting proposals for the enlargement of regulatory authority.

Senator POTTER. That should have been your statement, because unfortunately many people are not nearly as familiar with it as you are. I certainly am not. I will be very frank to say that many people, many citizens, are concerned. They think that here is a railroad safety bill. It is like being for God and mother. Everybody is for safety.

Mr. PRESTON. That is quite correct.

Senator POTTER. When a large industry like your railroads come in and oppose a railroad safety bill, the connotation is to the effect, "Well, it is a pretty hardboiled industry."

It seems to me it would be just a little bit better public relations to take the positive view, if that is your belief, that this bill which is now under consideration would add nothing to the safety of the railroads.

Mr. PRESTON. That is our position, sir.

Senator POTTER. And that possibly it would detract from it. That to me, if that is your view, would be the positive approach to it rather than defending the bill; say, "Here, we are the great advocates of safety. This is what we believe. This is what we have done and here is what we are going to do."

Mr. PRESTON. Senator, I am not the only witness who is to testify on behalf of the Association of American Railroads. You will hear, in the course of these hearings, from some of our chief executives, from one of our responsible operating officers and from one of our safety witnesses.

They will undertake, I know, to indicate the very positive approach which the railroads do take for the advancement of railroad safety as the prime concern of private management. The apprehension always is that if you introduce regulatory authority into the field of the actual operation of railroad trains, you will spoil the picture rather than help the picture, and you will take a long step toward producing a condition where private operation and management will prove not to be the effective system it is throughout this country. In other words, we find in legislation of this character an actual threat to the operation of the railroads.

The CHAIRMAN. Mr. Witness, historically, what has been the position of the railroads? What was the position of the railroads back in 1887 when the first bill was introduced to have automatic couplers? Did the railroads oppose it at that time? They did; did they not?

Mr. PRESTON. That is a little ahead of my time. I can only testify to hearsay. But my impression is that you are correct in your statement. If I find you are not, or have reason——

The CHAIRMAN. That is demonstrable, I think.

Mr. Witness, may I interrupt you before you start reading? Is the Norfolk & Southern one of your railroads?

Mr. PRESTON. It is a member of our association.

The CHAIRMAN. I want to read a statement for the record, speaking about safety devices and costs, Mr. Potter.

An ICC examiner recently has filed a report criticizing the extravagant use of funds by the general officers and directors of the Norfolk Southern. In 1946 they received compensation in the amount of $59,190. In 1951 this had climbed, under new management, to $365,454, or an increase of 517 percent. In 1950 they received in salaries, bonuses, and fees, $357,569. In addition, they received substantial amounts for expenditures for travel, living, entertainment, and so forth. This included maintenance of penthouse apartments and hotel suites.

This states:

An Interstate Commerce Commission examiner yesterday wrapped "extravagant" use of Norfolk Southern Railway funds for officers' expenses and salaries under the former management of J. T. Kingsley, Washington, and P. B. McGinnis, New York City.

Examiner O. L. Mohundro said expenditures were so "wasteful" they violated "the letter and spirit" of the ICC Act. Mohundro conducted hearings last year on the case.

Mohundro said McGinnis, Kingsley, and two directors, W. T. Griffin, New York City, and C. Newton Kidd, Baltimore, collected $716,771 in salaries, bonuses, and fees.

The examiner's report said penthouse apartments and hotel suites were maintained at the railroad's expense at Virginia Beach, Va.; Miami Beach; Washington; and Norfolk, Va., and railroad funds were used to provide Kingsley, his family and friends with "luxurious accommodations at a leading resort hotel" and airplane trips.

McGinnis recently resigned as chairman of the board and a new president was elected to replace Kingsley.

They ought to say, "Thank God for that." There is $700,000 that was germane to the railroad's operation. What do they call this devilish thing—featherbedding—that is used by other people. How much have they put out in safety devices? They have spent $700,000 on frills. It is something to think about. It is something to get angry about, isn't it?

Mr. PRESTON. Well, Mr. Chairman, certainly if there have been instances in the railroad industry where as a matter of fact the officials indulge in——

The CHAIRMAN. Official featherbedding.

Mr. PRESTON. Nothing could be more regretted than that. The resulting public reaction is highly regrettable.

You understand, of course, that matters of that character do not fall within any part——

The CHAIRMAN. I think you could slap their wrists as an association. I think it would be timely in face of that report, which was in the press the day before yesterday, to have your association come out and say, "We condemn these things."

I think you could say, "We, the association, speak for the railroads in the country and we are opposed to it."

Mr. PRESTON. I take it, Mr. Senator, this discussion seems to be pretty far away——

The CHAIRMAN. But it is collateral, though.

Mr. PRESTON. Yes.

Senator POTTER. I have to get something in the record. May I be excused?

The CHAIRMAN. Certainly.

Mr. PRESTON. Of course, in a matter of that kind the association would not undertake to pass judgment on what may be shown with respect to the operations of an individual railroad.

The CHAIRMAN. Couldn't you point out they are riding for a fall? You could point out they were unfair to the association's practices. Wouldn't that be fair?

Mr. PRESTON. That would be a matter for the consideration of the chief executives of the association, and it is one to which I hardly feel qualified to speak.

The CHAIRMAN. I will not press that any further. Thank you.

Mr. PRESTON. Now, Mr. Chairman, I should like to come to the other bill which is the subject of hearings here today, S. 539, the communications and operating-rules bill.

With the permission of the committee, I should like to speak very briefly with reference to S. 539, the so-called communications and operating-rules bill. Unlike S. 1401, this bill was introduced as long ago as January 20, 1953. The proposals embodied in it are by no means new, similar proposed legislation having been urged upon Congress, but rejected, upon a number of occasions in the past. Time permitting, we are prepared now to make a full presentation to your committee with respect to this bill, which is regarded by the

railroads not merely as unnecessary but as dangerously harmful to the public interest in safe, efficient, and economical railroad operation. Spokesmen for the industry who will follow me will fully develop the reasons for the position taken by the railroads in the matter.

The CHAIRMAN. Anticipating those spokesmen who are to come before us, let me point out that if you take a taxicab here at the Capitol and go to the Carlton Hotel, you will hear jabbering in that cab through a system that is connected to the central office by electronics. That happens constantly.

Mr. PRESTON. I am constantly and profoundly confused by what I hear.

The CHAIRMAN. I am, too. But it does tell the man where to go and pick up a fare and where to stop. I was on the Pennsylvania Railroad in a cab recently going through their system. I saw an electronic device working between the conductor and engineer on that train. They are using it. Other railroads have, too. They have tried it out on the western roads, too. There will be testimony on that before we get through.

You can conceive that if the man who brought the wild locomotive in here, knew it was going to crash through the gate, that if the engineer and the conductor had some control, told the boys to "throw the switch," had some communication that way, perhaps the passengers could have been better protected. They had no communications at all.

Mr. PRESTON. Now, Mr. Chairman, with respect to the availability of radio communication in train communication, we expect to put on a man who is really qualified to talk about it. I am not really qualified to talk about it. I will only say this: The broad outline of the proposition which we lay before your committee in connection with this bill, so far as radio installation is concerned, is that the railroads themselves are making progressive and rapid advances in the adaptation of a relatively new device to fit in with the operation of other tried existing signaling and communications systems already in use, that the radio is to an extent still in a formative stage and that there is no occasion——

The CHAIRMAN. You mean television is?

Mr. PRESTON. No; I mean radio; radio in respect to adaptation to train operations is in a formative stage, and that there is no need or occasion for compulsion upon the railroads in that regard.

Our witnesses will show what has been done in that respect. I am not really qualified along that line, Mr. Chairman.

I shall confine myself to brief remarks directed to the ambiguity of the bill, which is such as in itself to call for its rejection.

The CHAIRMAN. I suppose you will submit some amendments to do away with the ambiguity?

Mr. PRESTON. We would, if we could find any which would take care of the situation.

The CHAIRMAN. Perhaps we can help you before we get through.

Senator SCHOEPPEL. The thing I gather you are fearful of, Mr. Preston, is that you are injecting by this legislation, if passed and approved, dual management of railroads?

Mr. PRESTON. That, in a word, is precisely the point we seek to make, Senator, and that the consequences of dual management are a dilution of responsibility with ominous consequences to the safe, efficient, and economical operation of the railroads.

Senator SCHOEPPEL. That was the next question I wanted to go into. If you had that split management factor, you would have an uncertainty in there, a splitting of responsibility. And I can see, unless it was pretty nearly defined, there would be confusion. I hope that some of you people that testify here will go into that phase of the thing as you see it.

Mr. PRESTON. I have no doubt that the succeeding witnesses will go into that phase of the matter. I am sure for myself that the confusion which would result from a necessity to ascertain whether management could act upon its own responsibility or must first come to its supervising parent, the ICC, before taking action with respect to these operating rules and these installations of even down to telephone and telegraph, the uncertainty as to what could be done upon private initiative and what could be done only upon administrative approval would, in my judgment, be most deleterious to an approach to the most efficient and effective operation of the railroads.

I take it to be a cardinal principle about which there is no dispute that clarity is a prime requisite of desirable legislation and that particularly with respect to legislation affording to the Interstate Commerce Commission new and additional powers impinging upon the responsibility of railroad management in the field of operation, any new powers should be clearly defined and their scope readily ascertainable from the test of the law. As I shall hope to show the committee, S. 539 is so vague and indefinite that no one can be sure of its real meaning.

Passing other features of the bill as to which there is marked uncertainty, I should like to come at once to that feature which deals with rules and regulations for the operation of trains. On the face of the bill it might appear that the provisions in this respect do not go beyond authorizing the Commission to require that the railroads themselves establish such rules and regulations and file them, together with any modifications thereof, with the Commission. But that is certainly not the construction placed upon the bill by the Interstate Commerce Commission, which is the body to interpret and apply the law if enacted. It is apparent from the report of the Commission's Legislative Committee upon the bill, dated March 10, 1953, that the Commission proceeds upon the theory that the bill would afford to the Commission authority to prescribe and enforce rules for the operation of trains—although the Commission's report certainly leaves the degree of such authority in a state of complete uncertainty.

Thus, the Commission says that, if enacted, the bill would answer the question of the Commission's jurisdiction under section 25 of the act "to prescribe manual block systems, which systems for the most part consist of operating rules." And it is further said in the report that the bill would place the Commission in a position to "determine whether action should be taken with a view to requiring changes or additions" in or to the rules. Thus, the Commission proceeds upon the premise that the effect of the bill would go beyond the necessary implication of its language and would authorize the Commission to prescribe the rules and to require changes and modifications in them. Under this construction, the Commission will have been introduced into an authoritative role with respect to actual railroad operation—an ominous result, as succeeding witnesses will show.

Proceeding upon the assumption that the Commission is right, and that this bill would afford it authoritative powers with respect to operating rules, it is pertinent to inquire as to the scope and extent of the power. No answer to this inquiry is to be found in the language of the bill, which upon scrutiny will be found to be loaded with confusion and uncertainty.

Thus, the language runs to the establishment, maintenance, and observance of "rules and regulations for the operation of trains in connection with the above-named devices, appliances, methods, and systems." The above-named devices, appliances, methods, and systems referred to are, of course, signal and communication systems enumerated earlier in the bill, including block signal systems, automatic train stop, train control and cab signal devices, and telegraph, telephone, radio, and other means of wayside or train communication.

The provision that the rules referred to are those for operation of trains in connection with these appliances is evidently intended as a limitation of some kind upon the scope of the Commission's authority. But what is that limitation and where is the line to be drawn? The language of the bill affords no answer. Obviously, trains cannot be operated at all except in connection with some means of signaling or communication, in the light of which the purported limitation might be regarded as without meaning. If anything less than plenary power to take over the prescription and enforcement of rules for the operation of trains is intended, the bill fails utterly to draw any recognizable line of demarcation.

There is another provision in the language of the bill apparently intended to indicate some limitation upon the Commission's power in the field of train operation. I refer to the provision that the rules to be established, maintained, and observed not only pertain to those "in connection with the above-named devices," etc., but also that the rules referred to are such as are "intended to promote safety of railroad operation."

As a limitation upon the scope of the power which the bill, if enacted, would confer upon the Commission, this phrase defies definition and analysis. The basic truth is that all of the rules for the operation of trains bear upon the safety of operation. Viewed in the light of this basic fact, the purported limitation is without any meaning whatever. Again, does the phrase "intended to promote safety of operation" mean rules which may be prescribed by the Commission with such intention, or rules established by the railroads themselves with such intention, or both? The answer is not to be found in the language of the bill.

It is not amiss to refer in this connection to the consideration which was given to similar proposed legislation in the 81st Congress. Under consideration at that time was H. R. 378, which, as introduced, referred to the establishment of "rules, regulations, and practices with respect to operation of trains intended to promote safety of railroad operation."

The remonstrance against the breadth of this provision which developed in the course of hearings on that bill led the Commission itself to propose certain amendments, presumably of a limiting character, generally spoken of as the Splawn amendments. Among such amendments was the provision that the rules and regulations covered by the bill should be confined to those affecting the operation

of trains "in connection with" the enumerated signaling and communication systems, but upon further hearings it developed that the Commission itself was unable to explain to what extent, if at all, this amendment would serve to limit the scope of the Commission's power and authority. Thus, Commissioner Splawn frankly stated that he did not know what could be done under the bill, even as amended, with respect to rules for the operation of trains. I should insert in that connection a reference to those hearings. They were supplemental hearings on H. R. 378 before House Committee on Interstate and Foreign Commerce, 81st Congress, 1st session, August 4, 5, 8, and 9, 1949, at page 221. Yet, notwithstanding the inability of those concerned with the legislation proposed in 1949 to understand its meaning and effect, the Commission comes forward again this year with the recommendation that the same ambiguous language be enacted into law.

That the Commission has apparently been unable to devise language which would afford to the Commission a clearly limited authority with respect to rules for the operation of trains is not altogether surprising. I am not sure but what we are confronted with something approaching an all or none proposition.

At all events, it is clear that if you are ready to take a long step in the direction of a transfer of responsibility for railroad operation from management to a regulatory agency, you have only to approve S. 539.

If, on the other hand, you deem it the part of wisdom to retain private management and control of train operation by the responsible officers of the railroads themselves, you will decline to report S. 539.

The insidious and harmful result which would certainly flow from the enactment of this legislation will be fully developed by the testimony now to be offered. Our first spokesmen will be two chief executives of member lines of the Association of American Railroads, namely, Mr. F. G. Gurley, president of the Atchison, Topeka & Santa Fe Railway Co., and Mr. P. M. Shoemaker, president of the Delaware, Lackawanna & Western Railroad Co., who will be followed by Mr. E. P. Stine, assistant to vice president—operation, of the Chicago, Burlington & Quincy Railroad Co. and Mr. D. E. Mumford, manager—safety, New York Central system.

Mr. Chairman, that completes my statement.

I wish to express my appreciation for the patience with which you and the members of the committee have heard me.

The CHAIRMAN. Thank you for your courtesy.

Senator GRISWOLD. I would like to ask a question, Mr. Chairman. How are the safety rules developed?

Mr. PRESTON. The safety rules of the railroads, as I understand, Senator Griswold, and subject to correction by the safety witness who will follow me, and who is better versed in the history of that matter, they have been developed through cooperative action of the railroads over many, many years.

The pertinent rules reflect the experience of the railroads from the inception of their operation, and their constant adaptation to advances in the art of railroading and their constant adaptation to the increasing demands upon the railroads as the country developed and the volume of the traffic increased.

There is within the Association of American Railroads an organization which is constantly devoting its attention to the matter of rules affecting safety operations.

Senator GRISWOLD. Are these adopted sometimes after consultation with the employees?

Mr. PRESTON. I am quite sure that is the case, Senator. I cannot imagine that the employees on the railroads having suggestions to make which they deem would be constructive in the matter of improvement of the rules pertaining to safety would ever have anything but the most ready access to the managements of the railroad, and that their views would not receive but the most careful consideration.

Senator GRISWOLD. Are safety rules sometimes the subject of collective bargaining between the railroads and the employees' organizations?

Mr. PRESTON. Now, as to that, Senator, I am not able to give you a straight answer.

Senator GRISWOLD. You have not engaged in collective bargaining procedures?

Mr. PRESTON. No; I am not sufficiently familiar with that to answer your question.

Senator GRISWOLD. Have some of the rules come about as a result of suggestions or pressure or orders from the ICC?

Mr. PRESTON. Not to my knowledge. The operating rules of the railroads pertaining to the operation of trains, and they directly bear upon safety, are not the result of any governmental compulsion whatever.

The reason I hesitated at the inception of my answer, Senator, is that with respect to installations which the Commission now has authority to require——

Senator GRISWOLD. That is, like your block system?

Mr. PRESTON. That is right. The Commission does have authority with respect to the rules and regulations governing the installation and the maintenance of those prescribed systems.

Senator GRISWOLD. That is all.

(See separate appendix for supplemental information from Association of American Railroads.)

STATEMENT OF F. G. GURLEY, PRESIDENT OF ATCHISON, TOPEKA & SANTA FE RAILWAY

The CHAIRMAN. Our next witness is Mr. F. G. Gurley, president of the Atchison, Topeka & Santa Fe Railway.

Mr. GURLEY. I think everyone in America has a feeling of pride in your railroad. Not many railroads have a song written about them as you do. It is a pretty good song. I like to think of the early days of the Atchison, Topeka & Santa Fe Railway and the New England money that started that railroad.

Mr. GURLEY. If it were not for the money from New England, Mr. Chairman, we might not have that railroad today.

The CHAIRMAN. And the Burlington, also.

Mr. GURLEY. Gentlemen, I should say in the beginning that I think there are 13 pages of my testimony available. There are a couple of pages being rewritten. I worked them over on the train last night. They will be up here in a few moments, I hope.

My name is F. G. Gurley. My headquarters are in Chicago. I am

president of the railway companies which comprise the Santa Fe system lines. I am generally familiar with the operating problems of the western carriers and I appear here today on their behalf in opposition to Senate bill 539. What I shall say with respect to the implications of this bill so far as the Santa Fe is concerned will apply in a large measure to the railroad industry generally but particularly to the western carriers.

I shall have something to say about Government expenses and taxes at the conclusion of my testimony, but I shall first address myself to the direct provisions of the bill.

While we have the opinion as do many people that the Government agency which regulates us is probably the best of all the Government agencies, nevertheless it is our position that Senate bill 539 embodies the kind of governmental regulation which is both unnecessary and unwise. It is unnecessary because the railroads' record of safety shows that private management can do the job satisfactorily. And it is unwise because the field is one, we believe, in which governmental regulation is more likely to retard than to advance the cause of safety.

Before dealing concretely with the aims of the bill and with the railroads' performance record, I would like to say a few words about what I conceive to be the basic role of regulation in our business and governmental system. Regulation is not an end in itself. It is an exercise of power which must find its justification in the subject matter. By reason of their relation to the public, railroads have had a long history of regulation. There has been opportunity to see clearly that the common carrier status does not warrant Government control of every detail of the business.

I think the contrast between rate regulation and the present bill will illustrate my point completely. The committee knows that historically the regulation of rates and practices was directed toward the elimination of unreasonableness and discrimination—in other words, against the undesirable results of too little or too much competition between business rivals. While the transportation industry has undergone revolutionary changes since the passage of the Interstate Commerce Act in 1887, and while those changes in my opinion cast serious doubt on the wisdom and fairness of some of the old laws, regulation in the field of rates and practices may be desirable as a moderator of certain business practices.

But no such problem is presented here. In the field of safety the natural business tendencies and compelling business motives of the railroads are all in the same direction. No governmental agency can possibly have any stronger desire than the railroads themselves have to develop and apply the best, simplest, most economical, and most efficient devices, techniques, and practices for achieving safety of operation, and to keep working at the problem year in and year out.

As a part of the program of working at the problem, Santa Fe has a director of safety on the executive staff. This director devotes all of his time to safety, and he has the support of the operating vice president and the president. He has two system assistants. There are 13 regional safety supervisors who also devote their entire time to questions of safety. They work closely with the officers and employees on the road and in the shops and stations.

I think Senator Griswold may find some interest in this, in view of his questions a few moments ago.

There are 94 safety committees made up largely of our employees. These committee members held 376 formal meetings last year to discuss the enhancement of safety—to go over suggestions coming from other employees and in turn to secure new ideas to take back to the employees on the job. We use moving pictures to point out the safe way as distinguished from the unsafe way to do a job. Showing pictures at places of concentrated employment is not particularly difficult. It is difficult at smaller places. To meet that problem we use a special automotive vehicle we drive from place to place. Many showings are out on the road as distinguished from a community. I think I should interpolate here to say that recently we had about 150 of our supervisory officers at an all-day meeting at Amarillo, Tex., under the general chairmanship of the operating vice president in which we talked about nothing all day and all evening except improvements in our safety practices.

Now certainly I would be the last to say we have achieved perfection and that we don't make a lot of mistakes, but on the other hand I say with equal emphasis we are trying to do the best we can.

I describe these efforts at some length to help make the point that we take the question of safety quite seriously.

The railroads for which I speak believe that the Government should impose regulation upon business only when, and because, the Government can do a better job, or when, and because, factors are present which tend to keep business from doing its best. Even if we should accept such a situation in the field of rates, new construction and abandonment, issuance of securities, intercarrier competition, and the like, there certainly is no analogy between those aspects of the railroad business and the field of operating practices and safety.

I repeat what I said earlier that we think regulation is not an end in itself but must be justified by the subject matter. On this fundamental basis Senate bill 539 cannot be justified.

This bill would enlarge the Commission's power in two directions—first, the Commission would be given authority over communication systems, including telegraph, telephone, and radio, and second, it would be given authority over the economic administration of the railroads. I listened to Mr. Preston's statement about the lack of clarity on the ambiguous provisions of the bill. I think that his criticism in that regard was well founded. Nevertheless, I have certain ideas about the meaning of the bill. That is why I say if you take the bill and apply the language of it to our operating rules, and you find out what constitutes block system, I say that the Commission is taking over the economic administration of the railroads and can do it under this bill. I would be completely frightened about it.

I will state further if perchance the bill should become law, which I hope it never will, it would be perfectly fair to say there will be long periods of litigation on what this means and what that means. But I have a very strong personal opinion that the intent of the bill is to divide responsibility between the Government, on the one hand, and private management, on the other, about the administrative details of the railroad business.

Continuing with my statement now, it would have control of practices relating to safety systems, including telegraph, telephone, and radio. We think this enlargement of the Commission's powers would be unnecessary and unwise.

It is unnecessary because the railroad's record in the field of safety is one of steady improvement and high accomplishment. Perhaps human nature is such that we remember the evil and forget the good; some may judge the thousands of safe trips by the one accident. But that is not a rational basis for enacting serious legislation.

It is also manifest that all movement involves risk of accident, and that the only way to eliminate all railroad accidents would be to stop all railroad operations. In the same way we could put an end to the staggering toll of automobiles casualties and to tragic airplane crashes. But again we must be realistic about the problem, and I suggest that the way to be realistic about the proposal embodied in the present bill is to look at the record of safety on the railroads over the years.

Statistics prepared by the National Safety Council show that in 1923 there were 30.89 casualties per million man-hours on the railroads. There were only 8.76 casualties per million man-hours in 1948 and 7.31 in 1952. I use 1948, Senator, because that was the record we had in front of us when we considered a similar bill in 1949.

Thus over the past 25 or 30 years the improvement in safety has been very marked, and even between 1948 and 1952 there was an improvement of 16 percent in the safety record.

The constant progress of the railroads in the field of passenger safety can be shown in comparison with other forms of transportation by a study of statistics compiled by the National Safety Council.

In 1947 there were 75 railroad passenger deaths with a rate of 610 million passenger-miles per death. In 1952 there were only 14 railroad passenger deaths at the rate of 2,430 million passenger-miles per death

For the domestic airlines the same source shows that in 1947 there were 199 passenger deaths with a rate of 32 million passenger-miles per death, or more than 19 times the death rate of railroad passengers. In 1952 there were 46 domestic airline deaths with a rate of 280 million passenger-miles per death, which is about 8½ times the death rate for railroad passengers in 1952.

The latest available figures from the National Safety Council as to bus and automobile passengers are for 1951. They show 130 deaths at the rate of 462 million passenger-miles per death for buses and 21,000 deaths at a rate of 41 million miles per death for automobiles and taxis.

The National Safety Council also publishes statistics showing the frequency rate of railroad-employee injuries. This rate includes all deaths and all injuries involving the loss of at least 1 day's time. For the year 1947 the frequency rate was 18.24 injuries per million man-hours. In 1951 the figure had declined to 15.03 per million man-hours, or a reduction under 1947 of more than 17 percent. Data for 1952 have not yet been released by the safety council.

I submit that in view of this constantly improved safety record the proposal to transfer the promotion of safety in all of its phases to the Commission is neither necessary nor desirable in the public interest. This record was made without the exercise by the Government of any of the powers which it is now proposed to give to the Commission. It is a record which was made because railroad management has the strongest motives for striving constantly toward new and better techniques and devises for railroad safety.

I do not see how anyone could seriously believe that safety of operations flowing from the use of telegraph, telephone, radio, and

other communicating systems could be improved by transferring control of this subject-matter from private management to a governmental agency. There is nothing to support such a belief.

Adaptation of the telegraph and telephone to railroad operations dates from the practical development of those inventions and is now so complete that it is hard to conceive of an area in which a governmental agency could contribute anything of value. The same observation applies to the possibility of contribution by an agency concerning radio.

While the use of this much newer technique is not universal, it is being constantly expanded. New areas are being found for its effective application. The miles of road covered by radio expanded from 5,700 as of January 1, 1949, to more than 35,000 as of January 1, 1953. Here, as in the case of telegraph and telephone, the railroads have been acting voluntarily without governmental control or prodding.

They have had and still have the strongest of incentives for applying to railroad operations each new development in communications technique, namely, the sound business incentive of obtaining the highest level of production on the most efficient basis. The Government should encourage that attitude and should not, as in this case, deaden incentive by transferring control of the subject matter to a governmental agency, whose interest in the result necessarily will rest upon other considerations.

In this connection I think the committee must bear in mind that Congress, like the rest of us, is faced here with a balancing of interests. Accidents are deplorable from any point of view, but no safety device or technique has been found which can reasonably be employed to eliminate them completely.

We must reckon with two factors that cannot be overlooked or overcome. First, we can never protect completely against the human error, the momentary lapse, the heedless act.

After I dictated the sentence at the top of page 10 I reflected on it and I think the sentence I shall now read is not quite complete. The sentence reads, "I believe it is fair to say that human error of one kind or another is the real cause of all accidents." I think there should be coupled up with that statement the further statement to the effect that sometimes, with all charity toward human beings, human ignorance is also responsible for some accidents.

I have in mind that for many years there wasn't a man in the world who knew how to overcome the internal transverse fissure in a rail. Finally we mastered it, but during that period of ignorance we had several costly accidents, and because we were not smart enough, and no one else in the world was smart enough, to lick it.

Senator SCHOEPPEL. There are still some of us too ignorant to understand what you are saying.

Mr. GURLEY. You are not too ignorant, Senator, but I am not talking comprehensively. But now we have talked on a transverse fissure. A transverse fissure, as the name implies, is the separation of the molecules of the metal which moves transversely. It starts with a very little pinpoint inside the rail and moves crosswise of the rail, finally progressing to the point where it breaks.

Senator SCHOEPPEL. Isn't that term "crystallization?"

Mr. GURLEY. Crystallization is as good a word as you might use to describe it. We finally, after a long period of experiments, conducted under the general auspices of the University of Chicago, decided that the rate of cooling a rail after it was rolled was something that had to be changed. So we went into what might be characterized as the "slow cooling." That overcame those transverse fissures.

I say again we were not smart enough for a period of years to overcome it, but we made it finally.

Now, as I say, we keep all of this in mind in our safety work which I described earlier. Second, we must reconcile ourselves to the fact that sometimes contributions to safety cannot be obtained by methods or means within the limits of price or practicality.

For example, many highway accidents are caused by excessive speed. A large proportion of these accidents might be avoided by a law requiring all automobile engines either to be designed for a certain maximum speed or to be equipped with a governor limiting speed to, say, 45 miles an hour. But drivers could still be reckless at that speed. They could cause fatal collisions by dozing at the wheel, or other bad practices. Many other highway accidents occur at intersections. The toll of deaths and injuries on this account could be eliminated by separating the grade of all such crossings. The cost of such grade separation would be so fantastically high and would be so impractical otherwise, however, that I am sure no one would advocate its universal adoption.

In short, cost and practicality are plainly elements which must be taken into account in deciding upon Government policy in the field of safety. Then there is always the human equation. Railroad management has balanced these interests over a period of many decades, and today's record of safety proves that the public has benefited from the process. Safety devices of genuine merit have won ready acceptance. Those whose merit appeared questionable have been approached with caution and accepted only after thorough experiment. Some have been rejected. I do not believe that the bureaucratic process would have been as successful and I see nothing to suggest that it would be in the future.

There is a distinct danger that by putting railroad management in a straitjacket of safety regulation Congress would defeat its declared purpose by stifling invention and hampering experimentation. Also we cannot overlook the danger that dubious and overcostly devices might be forced upon a reluctant industry by an agency without responsibility either for the cost of installation or the consequences of failure.

Progress in the past has come largely from the freedom of private management to seek newer and better methods and devices and to exploit and develop them as a normal part of our competitive free-enterprise system. We do not believe that further regimentation is a substitute for enterprise.

The proposal to transfer from private management to Government bureau the formulation of safety rules is equally unsound in the light of the record and probably has even more dangerous implications, so far as the public interest is concerned, than Government regulation of communicating systems.

The safety record of the railroads is not the product of regulation. It is true that the Commission has specifically ordered the installation

of some block signals and other safety signals and devices, but as Commissioner Mahaffie of the Commission stated to you in his letter of March 10, 1953, concerning this bill, the Commission's orders actually cover less than 10 percent of the total mileage on which such systems have been installed.

Thus again you find that the railroad safety record has resulted not from compulsion but from the steady improvement of plant and equipment and from the constant study of how to do the job better and more safely.

Railway accidents are very costly, and even if money were the only consideration, railroad management would still have strong business reasons for striving to make operations safer. But much more than this is involved.

The operating rules of the railroads reflect the judgment based upon the experience of hundreds of men over scores of years as to how best to perform various railroad operations safely and efficiently. They have not been men who dealt with the subject at a distance, or theoretically by academic standards. They were, and still are, men who have lived through the operations covered by the rules and who have had occasion to study the rules in terms of their own personal safety and the safety of their immediate subordinates.

The rules governing the operation of trains in both directions on a single track are a tribute to the creative genius of American railroadmen. The basic thinking was done years ago and the basic concepts have stood the test of time. No Government agency contributed to those basic concepts.

Every experienced operating man knows, however, that there is no single standard of safe operation applicable to each operation of every railroad at every time and place. Conditions vary on different railroads, and on the same railroad at different times and places. Intimate knowledge of the facts enables each railroad management to provide the necessary flexibility in its rules to deal effectively with its own problems. I very much fear that the inevitable tendency of bureaucratic control would be toward rigidity of standards.

This seems to be implicit in the proposed plan because apparently this bill contemplates that each carrier shall file its operating rules with the Commission in their present form and from time to time as they may be changed, and that the Commission, if it sees fit, may decree a new set of rules entirely. There is nothing to support a belief that the Commission and its staff knows more about the subject than railroad management and can formulate better, more effective rules.

I cannot believe that the staff of a governmental bureau can possibly be as well qualified to formulate and apply safe operating rules as the men whose personal experience has supplied a background of knowledge as to what the various aspects of the problems are. It is these men who have developed the best railroad plant in the world.

It seems clear that the injection of Government control in the field of operating rules would result in a division of authority and responsibility between railroad management and a governmental agency, and the result could only be harmful to the public interest.

Despite all that, it is perfectly clear, however, that a governmental agency aspires to securing authority to write and administer rules covering the details of railroad operation. The record of this bill brings that out into the open. The bill when introduced by Senator

Tobey in January did not contain blanket authority for the employment of an unknown number of additional men to perform unnecessary jobs, but the letter of March 10, 1953, from the Legislative Committee of the Interstate Commerce Commission seeks language to authorize the employment of these additional bureau employees—employees who, we are convinced, are not needed.

Earlier, I mentioned Government spending and taxes. Santa Fe Federal tax accruals for the year 1952 were approximately $75 million. I use this figure to show that like other taxpayers we are keenly aware of the burden of taxes. Like other taxpayers, we accept the tax burden that is necessary for national defense. Like other taxpayers, we are appreciative of the actions of the administration in their efforts to reduce unnecessary expense in Government bureaus and agencies.

Here we are considering a counterclockwise movement. We are considering extending the power of a Government agency unnecessarily and unwisely and with that extension of power, additional expense is to be encountered.

Observe that the Commission is to be authorized to employ persons familiar with the subject. More expense—more tax burden. We think it is going in the wrong direction.

In summary, I ask you to keep in mind that all progress made by the railroads, including improvement in safety, comes from (1) the investment of money for better facilities and equipment, (2) rules and practices supported by wise discipline, and (3) particularly with reference to safety, a continued program of education of employees and instilling a spirit of emulation.

We must have a plan whereby the thoughts of the best will stimulate others. Under that stimulation each railroad manager, analyzing what has been done elsewhere, will, in the light of the physical conditions and circumstances on his property, try to devise means and methods to do even better. That is the way to make progress.

The way to retard progress is to adopt a plan which has uniformity as the dominating premise. Any such plan dulls the imagination and there is a lack of originality which is implicit in the other and more progressive plan. I desire to emphasize that there is no more deceptive reasoning than to assume that a government bureau, merely because it is a government bureau, can develop ideas and promote new methods as effectively on a uniform basis as can well trained and experienced men functioning competitively. In my opinion, that fact cannot be stressed too much. It is in reality the central fact which calls for the rejection of S. 539.

That concludes my prepared statement.

I would like to add one little thing which has occured to me since I came into the room. Of course, we recognize that new techniques, new gadgets present new opportunities. One of the things that has always bothered railroad management of the western railroads has been the dangers and evils of the so-called flash floods. I think all of us have had unfortunate and unhappy experiences of a sudden flood of water coming down from some of the mountains without our knowing there was any water coming.

Recently, in a minor way, perhaps, in order to make a contribution to that we are experimenting out on the Sacremento Wash in the Mohave Desert with a little gadget which is above the railroad, a floating system. That float will actuate a radio device which will

send a warning signal to our train dispatcher in charge of that territory.

In that territory all of our trains now are equipped with radio communications between the caboose and the engine. That warning device will cut in on that system so that there will be a message go from this little gadget 20 miles above the track to the train dispatcher and all trains when the water has reached the point where our engineering levels have decided danger is there.

I mention that not as a big thing but one of the little steps you take as you go along.

Senator GRISWOLD. When you say "20 miles" you mean upstream from the railroad?

Mr. GURLEY. Yes, sir. I think that is all I have to say, unless there are some questions.

Senator SCHOEPPEL. I have no questions.

Senator GRISWOLD. I would like to ask you the same question I asked Mr. Preston. Is the matter of safety rules and regulations sometimes a matter for discussion when you come to collective bargaining with your employees?

Mr. GURLEY. I think it is fair to answer that affirmatively. Yet it would also be fair to say as a by-and-large matter rules are not the subject of collective bargaining.

It takes a little explaining to make the distinction that is there. It is not at all uncommon—well, perhaps that is not quite the way to phrase it, but it happens occasionally that the employees will come in and say, "Such and such a rule isn't quite what it ought to be." Then you sit down and discuss the changing of it.

Yet, Senator, I think it is not quite a part of the collective-bargaining process. It is more of the cooperation process, if you please, as distinguished from collective bargaining.

Senator GRISWOLD. The normal practice would be a matter of consultation and not waiting for the ending of a wage contract or anything, but——

Mr. GURLEY. Those suggestions, Senator, come constantly from the safety meetings.

I have acted as chairman, as you recall from our acquaintance in the Nebraska days, of many a safety committee. You are always exchanging views.

To expand just a little more, there are times when matters which relate to safety come into collective bargaining. But I repeat it is fair to say it is not the big part of your safety rules. I would say our rules probably, without being too precise about it, are 95 percent a management edict and 5 percent the other.

You must keep in mind also, Senator, however, that management of the railroads is merely a clerk, brakemen, switchman, or engineer who has put on a new badge and became the superintendent; so you are not dealing, when you deal with railroad management, with people who are worthy of the name "novices."

Senator GRISWOLD. It is apparent here today that those representing the employees are very properly very much interested in safety of their personnel.

Mr. GURLEY. I know of no reason why they shouldn't be.

Senator GRISWOLD. I say they should be, and constantly on the alert to make their lives safer.

They take the attitude here today that some of these things should be done. So, if there is a definite difference of opinion, why, perhaps sometimes even in a dispute as to the contract of employment, this could be considered, could it not?

Mr. GURLEY. Yes, surely.

Senator GRISWOLD. There is one other thing I would like to ask. You have discussed in a general way what Government control does, how it stifles initiative and, perhaps, stops in some way the system of trial and error and the development of the better way of doing things.

As you have installed radio communication systems on trains, have the different railroads that have adopted that adopted the same system?

Mr. GURLEY. I think not.

Senator GRISWOLD. You use that system on some of your runs, do you?

Mr. GURLEY. Yes, sir.

Senator GRISWOLD. You may buy a set from one company, and try one type of operation, and the Pennsylvania may try another, and the New York Central another?

Mr. GURLEY. There is no question about that.

Senator GRISWOLD. If you find the system that the Pennsylvania uses is better, next year you will start installing that?

Mr. GURLEY. That is right.

Senator GRISWOLD. That is what you mean by the use of initiative and each working out his own plans for operating such a communication system?

Mr. GURLEY. You are quite right, Senator. I would like to expand on that. Some of the railroads have made quite a bit of emphasis on the adaptation of radio communication between a train and station. They may be right. But we place the emphasis in a little different way. We place the emphasis in two general fields.

The first is the communication in our mountain territory between the engineer and the conductor, or between the engine and caboose. We operate fairly long trains in our mountain territory, which is approximately 600 miles in length west of Winslow, Ariz.

We spent our first money there to equip all of our freight locomotives and freight caboose cars with radio. Then we went to the use of radio between the yardmaster and the switch engine. We are extending, now, the practice of communication between the engineer and the caboose on other parts of the system. It was our thinking that that was the best thing to do.

Other railroads have looked at it a bit differently. Only recently I was discussing, with a fellow railroad president, this situation, and he kind of opened my eyes a little bit to some of the benefits of his system. We are talking that over now to see if anything better can be done.

Senator GRISWOLD. There is one other question I would like to ask. The Interstate Commerce Commission has a large control in the matter of rates and regulation of competing methods of transporting goods, such as trucks and buses, and so forth. Do you feel that the Government control in that field has, in some way, stifled the trial of new methods or, say, a combination of railroads and trucks,

or railroads and buses? Have you felt some stifling of initiative in that field where they do have great authority?

Mr. GURLEY. That is a controversial question, but I have an opinion on it. I think the answer to your question is "Yes." I do think that some of the regulation has resulted in practices which, in my opinion at least, are not the best. I quarreled a little bit with the Commission in its interpretation about where and under what circumstances a railroad might use a track to distribute less-than-carload merchandise out in the country. You get into pretty technical discussions.

I don't know. I suppose men have striven all through history just for the proper place for a Government bureau and regulation and control of business. But I am one of those who have a strong opinion that if you err at all in where that dividing line should be, I would err on the side of less regulation than more.

Senator GRISWOLD. Thank you very much.

Senator SCHOEPPEL. I would like to ask you this, following up an avenue that was opened following a question by Senator Griswold. You have described your experience in discussing your approach to the radio communications as you see it on your great railroad system, what other railroad managements feel might be the best adaptable approach to that on their railroads, giving due regard, of course, to the terrain, climatic conditions, and everything that exists in some areas, fog, rain, and all those things.

Isn't that a proper field for management to approach, even in their competitive activities in their railroads, one with the other, to bring out the best and exchange ideas on it, rather than to put it on a basis of a regulatory body issuing an order or an edict or a condition that would be impractical?

Mr. GURLEY. Why, Senator, I think there is no question about it. You can just take what I decided on the Santa Fe. I decided on what I think should be done. If I were in the bureau writing the rule, that would be the rule I would have written. The other fellow wrote a different one, and he may be right about it.

Senator SCHOEPPEL. The point I am making, I think we are prone—and I served a little while as a regulatory chairman in my State; I hope some of my decisions were correct—but there is a tendency to be more rigid there. Sometimes overrigidity results.

We find, in a trial-and-error method, from a dollars-and-cents approach to it, which management must have, and ultimately the public must pay the bill, that was impractical. I have a feeling that these matters here, and some of these great changes, ought to be approached first through the eyes of the operational effects, such as have been determined in the long history of these new improvements that have come along.

I have a feeling that that is going to be the way we are going to approach the best safety practices, operating practices, and the elimination of unnecessary expense. That is the way I would like to look at this thing. I hope during this entire hearing here, we will have several phases of this thing, as it applies to some of these various things we are now discussing.

Mr. GURLEY. Certainly I share the view that you have expressed, that the best way to do this is along the line you have mentioned.

Goodness knows, I don't know how long one should talk on it, but you could talk all day and, perhaps, all week on the point. But you just can't escape the fact that the greatest prod to human progress is competition, and the greatest retardation is just the dead hand of neutrality upon a situation.

I don't know. It just seems to me when you get into this rule business and how you run trains, how you conduct your business, you are just getting right into the essence of a competitive system, as distinguished from a cartel system of a European country.

I don't want to branch out and make a political speech, but you are talking about a basic part of an enterprise.

Senator GRISWOLD. When any human being reaches a decision, it is much harder to get him to change his mind than it is to get a new man to adopt a new method.

Mr. GURLEY. There is no question about that. Being married to my wife has been a great help in that regard.

Senator GRISWOLD. I think we understand that. I have seen people in public office, including legislators, who spend years of their lives trying to justify a position they took several years before. That is just human nature, and we all do exactly the same thing. That is why a little competition and trying different methods in different areas, different systems, and so forth, has a good effect. I think that is all I had.

I might say that tomorrow morning the witnesses will be Mr. Patterson, ICC Commissioner, Mr. Shoemaker, president of the Delaware, Lackawana & Western Railroad, Mr. Stine, of the Chicago, Burlington & Quincy Railroad, and Mr. Mumford, manager, safety division of the New York Central System, in that order.

If there is nothing further, we stand adjourned until 10 o'clock tomorrow morning.

(Whereupon, at 12:30 p. m. the committee recessed, to reconvene at 10 a. m., April 15, 1953.)

RAILROAD SAFETY

WEDNESDAY, APRIL 15, 1953

UNITED STATES SENATE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C.

The committee met at 10:03 a. m., in room G–16, Capitol, Senator Charles W. Tobey (chairman) presiding.

Present: Senators Tobey, Bricker, Potter, Pastore, Monroney, and Smathers.

Also present: E. R. Jelsma, member of the professional staff, and Gene Dawson, administrative assistant to Hon. Homer E. Capehart.

The CHAIRMAN. The committee is in session. Our first witness is Mr. Patterson. You may proceed, Mr. Patterson.

STATEMENT OF WILLIAM J. PATTERSON, COMMISSIONER, INTERSTATE COMMERCE COMMISSION

Mr. PATTERSON. My name is William J. Patterson. I am the Interstate Commerce Commissioner to whom the Bureaus of Safety and Locomotive Inspection report, and am here at the invitation of this committee to discuss S. 1401 and S. 539. I will first address my remarks to S. 1401, which proposes to amend the Safety Appliance Acts with respect to power brakes. Since the Safety Appliance Acts are designed to promote safety in railroad operation, and since good brakes are of primary importance as a safety measure, I support this bill.

S. 1401, in its original draft, proposes to amend section 1 of the so-called Safety Appliance Acts by adding two paragraphs. Since these acts consist of three separate acts, approved on March 2, 1893, March 2, 1903, and April 14, 1910, it was at first thought that this bill should amend section 1 of the 1893 act, but upon further consideration, it appears that amendment of section 2 of the 1903 act would be more appropriate. I have, therefore, had the bill revised showing this amendment as well as other minor changes, all of which, including the additions proposed by the bill, are shown by underscoring on the revised draft of the bill, copies of which I have available here.

These amendments which it is requested that this committee adopt, are indicated as follows:

In the last line of the caption to the bill, the words "or train" have been inserted after the word "power."

In lines 1 through 5 of the original draft of the bill, reading, "that section 1 of the Safety Appliance Acts (45 U. S. C., title 45, ch. 1, secs. 1–16) is amended by adding the following:", is deleted, and the following is substituted in lieu thereof: "that section 2 of the Act of

March 2, 1903 (ch. 976, sec. 2, 32 Stat. 943; 45 U. S. Code, title 45, ch. I, secs. 1–16) is amended as follows:".

In lines 2–3 of the original draft, the word "section" is substituted for the word "subsection."

After line 5 on page 3 of the proposed draft, the following paragraph has been added:

> The provisions and requirements of this section shall be held to apply to all trains, locomotives, tenders, cars, and similar vehicles used, hauled, or permitted to be used or hauled by any railroad engaged in interstate commerce: and failure to comply with any such requirements of the said Interstate Commerce Commission shall be subject to the like penalty as failure to comply with any requirements of this section.

The addition of this paragraph is to provide a penalty provision and to more specifically provide for the applicability of this bill.

Power brake equipment for railway cars has undergone successive stages of development following the design of the first automatic air brake by George Westinghouse in 1872. In 1922, the Interstate Commerce Commission found it necessary to institute, under section 26 of the Interstate Commerce Act, an investigation, the purpose of which was to determine whether, and to what extent, power brakes and appliances for operating power-brake systems, then generally in use upon locomotives and cars of carriers by railroad subject to the Interstate Commerce Act, were adequate and in accordance with requirements of safety, what improved appliances or devices were available for use, and what improvements in power brakes and appliances could or should be made, to the end that increased safety in train operation might be obtained. A report was issued on July 18, 1924 (91 I. C. C. 481), in which progress was recorded and certain general conclusions and findings of the Commission were set forth, among which was a finding that improvements in power-brake appliances could be made and increased safety in train operation could and must be obtained.

Later in the year 1924, the Commission drafted and made public its tentative specifications and requirements covering power brakes for freight cars. Further tests and investigations were made, as a result of which a new type of brake, known as the AB brake, was developed. The Association of American Railroads adopted this brake as a standard in 1933 and, effective January 1, 1935, adopted a rule requiring that all freight cars in interchange service must be equipped with the improved brake on and after January 1, 1945.

Proper inspection, maintenance, and testing are absolute requisites for safe operation with any power-brake system yet developed. This has long been recognized by all who are familiar with the construction and operation of such systems. In 1925, members of the Bureau of Safety of the Interstate Commerce Commission cooperated with a committee of the mechanical division of the Association of American Railroads in the formulation of a code of rules for the maintenance and testing of airbrake equipment. These rules were issued by the Association of American Railroads, with the statement that they represent minimum requirements. They have since been revised and amended in some respects. However, there is nothing in the A. A. R. rules which requires the adoption of or the enforcement of this code of airbrake rules by any railroad company, and there is no provision

of law under which their observance can be required, notwithstanding the fact that they represent only minimum requirements.

The records of our Bureau of Safety show that there is widespread nonobservance of these rules. In the fiscal year 1952, our inspectors made airbrake tests on 2,661 trains, consisting of 122,214 cars, before departure from terminals. Railroad forces had prepared these trains for departure. However, when afterward tested by our inspectors, it was found that brakes were defective or inoperative on 5,626 of the cars. As a result of these tests, 2,744 cars having defective brakes were set out, and brakes were repaired on 2,828 cars remaining in the trains. The results of inspections of this nature for the past 3 fiscal years are shown in the following statement which indicates a material increase in the number of cars with defective brakes:

Year	Trains	Cars	After inspection began	
			Cars set out	Brakes repaired on cars in train
1950	2,826	124,708	2,364	2,045
1951	2,750	117,353	2,549	2,213
1952	2,661	122,214	2,744	2,828

Most, if not all, of the cars shown above with inoperative or defective brakes should have been discovered and given proper attention while the trains were being prepared for departure. There is no doubt that if tests had not been conducted subsequently by our inspectors, the cars would have been allowed to depart with brakes in defective or inoperative condition. Inspections of this character consist merely of a sampling or spot check of the practices followed by the railroads. This general condition should be corrected, and it can be done by the adoption and enforcement of adequate airbrake rules.

Senator PASTORE. Has this bill, which we are discussing now, anything to do with that situation?

Mr. PATTERSON. It has everything to do with it. It provides for inspection, testing, and repair of these airbrakes.

Further evidence of failure of railroads to comply with these minimum requirements for safe operation can be found in airbrake observation reports furnished by our inspectors. Checking such reports covering a recent 2-year period on 8 railroads which were picked at random, we find that 132 trains were observed departing from terminals without an airbrake test having been made. This indicates the prevalence of conditions for which there is no remedy under existing law.

During the fiscal years 1950, 1951, and 1952, we received 110 complaints from various railroad employees concerning failure of railroads to use the train brake systems in making specified movements, or to make proper tests of the airbrake system before departure from the terminal. In some cases, correction of the conditions complained of is effected by conference. The Commission is now without authority to require corrective action.

During the last 5 years the Commission has investigated 6 accidents caused by failure to enforce rules pertaining to inspection, maintenance or use of airbrake systems, as follows:

Report No.	Date	Railroad	Location	Kind of accident	Brake condition involved
3132	Sept. 30, 1947	P. R. R.	Scio, Ohio	Collision	Inadequate airbrake maintenance and tests.
3218	Dec. 3, 1948	A. C. L.	Ben Hill, Ga	do	Improper repairs and maintenance.
3456	Dec. 14, 1951	D. S. S. & A.	L'Anse, Mich	Derail	Inadequate tests and improper operation.
3462	Apr. 23, 1952	Utah	Jacobs, Utah	do	Inadequate tests.
3501	Dec. 26, 1952	T. R. R. of St. L.; Wabash.	St. Louis	Collision	Closed angle cock, inadequate test.
Ex parte 184	Jan. 15, 1953	Washington term.	Washington, D. C.	Derail	Angle cock accidentally closed, due to improper application.

These accidents resulted in the death of 5 persons and injury of 110 persons. While it is impossible to anticipate all of the conditions and practices that may be encountered, it cannot be questioned that adequate airbrake rules, standards, and instructions, properly enforced and obeyed, would bring about the correction of many of the dangerous airbrake conditions disclosed in these reports.

During the past 3 years, the AAR airbrake-maintenance rules have been under study by an AAR committee, in cooperation with representative of our Bureau of Safety, with a view to revising them. However, no satisfactory proposal has thus far been developed. The chief difficulties encountered have been the apparent desire of railroad representatives to relax some of the present requirements of the rules, thereby sacrificing protection for the expedition of traffic. It does not appear that there is any practical solution, other than the enactment of legislation giving the Commission specific and definite authority over the matter.

The railroads, collectively, through the Association of American Railroads, have failed to bring about the general adoption and enforcement of satisfactory rules for maintenance and testing of airbrakes. Because of the interchange of cars throughout the country, the necessary improvements cannot be realized unless higher standards of maintenance are placed in effect on all railroads. The failure on the part of many railroads to comply with even the present minimum requirements places an undue burden on those roads which endeavor to comply with the requirements of their existing rules. Full compliance on the part of all railroads would eliminate unreasonable burdens, since the design of modern power-brake systems is such that once the equipment is placed in proper condition, only a relatively small amount of maintenance is necessary to keep same in proper operating condition.

The proposed legislation would be in the interest of the public, not only by promoting safety but in bringing about a substantial increase in efficiency, which in my view would far outweigh the costs involved. During the past several years, particularly during winter weather, many railroads have encountered serious delays at terminals, and in many locations reduction in train length has been necessary in order to obtain even the minimum percentage of operative airbrake cars

required by law for safe operation. It is possible, by proper maintenance practices, to reduce or eliminate such incidents.

Senator PASTORE. May I interrupt you again? On page 6, you say:

> The chief difficulties encountered have been the apparent desire of railroad representatives to relax some of the present requirements of the rules, thereby sacrificing protection for the expedition of traffic.

Is it exactly that, or is it the matter of cost involved, too?

Mr. PATTERSON. I presume the cost is involved in it. But, I wouldn't say that the cost of this maintenance would be much of a factor here. They want to keep the trains moving for competitive reasons. They have to eventually repair them, anyway. So the longer a defect exists, the more dangerous it becomes and the more it costs to repair it.

Senator PASTORE. The reason I asked that question is that I can't comprehend why the railroads would resist a movement that would give the highest degree of protection, not only to the public, whom they convey, but to themselves, too, because an accident can be very, very costly.

Mr. PATTERSON. We have to deal with the facts of life here. I don't know, myself, why they do it. But, as I said, I think it is perhaps due to competitive reasons.

Senator PASTORE. Wouldn't they all be operating on the same basis, if they were all required to do the same thing? It wouldn't be a question of competition?

Mr. PATTERSON. Some of them do it better than others.

Senator BRICKER. Was this bill drafted by the Commission, or its staff?

Mr. PATTERSON. It was, but we found, on further reflection and examination of the bill, that it probably needs some amendments.

I will now take up S. 539. This bill was drafted to carry into effect recommendations contained in our annual reports since 1946. The recommendation in the 1952 report reads as follows:

> 8. We recommend that section 25 be amended by making it also applicable to telegraph, radio, inductive, or other wayside or train communication systems intended to promote safety of railroad operation.

You will note that the bill would amend subsection (b) of section 25 by adding, "telegraph, telephone, radio, inductive, or wayside and/or train communication systems," to the devices, appliances, methods and systems, the installation of which the Commission may require to promote the safety of railroad operation; give the Commission authority over rules and regulations for the operation of trains in connection therewith; and would require the carriers to file their rules, standards, and instructions for the installation, inspection, maintenance, and repair of the systems, devices, and appliances to which the Commission's jurisdiction would be extended and for the operation of trains in connection therewith.

Before commenting on the bill, I desire to call your attention to certain minor amendments proposed by the Commission's Committee on Legislation and Rules in its letter of March 10, 1953. These amendments are as follows:

In the opening paragraph, the reference to the United States Code as to the subsections proposed to be amended is incorrect. The parenthetical matter in lines 4 and 5, on page 1, should read "(49

U. S. C., sec. 26 (b) and 26 (c)),'' rather than ''(49 U. S. C. sec. 26 (a) and 26 (b)).''

In line 12 on page 2 of section (b), after ''tion,'' it is suggested that the words, ''in use on the date of the enactment of this amendatory provision or hereafter installed,'' be inserted therein.

It is suggested that in lines 18 and 19, on page 2, the words, ''in use on the date of the enactment of this amendatory provision or hereafter installed,'' be substituted for the words, ''in use on August 26, 1937, or such systems or devices thereafter installed.''

In lines 3 to 7, on page 4, of section (c), it is suggested that the words, ''within six months after August 26, 1937 (or within six months after enactment hereof in the case of telegraph, telephone, inductive, or other wayside and/or train communication systems),'' be stricken, and the words, ''within six months after the enactment of this amendatory provision,'' be substituted thereof.

In line 7, on page 5, the substitution of the words, ''after the enactment of this amendatory provision,'' is suggested for the words, ''after the enactment hereof.''

In addition to the amendment to subsection (d) of section 25 proposed in the bill, it is suggested that the second sentence of that subsection be amended to read:

> For these purposes *and to carry out the other purposes of this amendatory provision*, the Commission is authorized to employ persons familiar with the subject. [New matter in italic.]

Before discussing the bill, I would like, briefly, to describe the authority the Commission now has over safety matters. The Congress, for more than 50 years, has had before it the matter of safety of employees and travelers on railroads, and has from time to time enacted legislation to promote safety. The legislation thus enacted has, in every instance, proved to be not only of advantage to the carriers from a safety standpoint, but has also resulted in more efficient and economical operation. I doubt if any railroad would now desire to have any of this legislation repealed. The more important of these bills are: Locomotive Inspection Act; Safety Appliance Acts; Hours of Service Act, and section 25 of the Interstate Commerce Act.

I will first address my remarks to the provisions of the bill giving the Commission jurisdiction to require the installation of radio systems. There have been a number of installations made, but most of them have been made not to increase safety of operation so much as to increase efficiency and facilitate operation. I think all of the yard and terminal installations can be classed as having been made to increase efficiency and facilitate operation. In yards and terminals, the speeds of trains are slow and the danger of collisions and derailments is not as great as on lines where the speeds are frequently 90, 95, or even 100 miles an hour or more. I may say, further, that I cannot foresee at this time a situation where I would recommend the installation of a radio system except as an additional safety device to supplement existing block signal systems or train-stop, train-control, or cab-signal systems. In my view, it has not been developed sufficiently to displace any of these systems for the safe operation of trains. The Commission should have jurisdiction to require the installation of radio to promote safety of operations so as to keep abreast of develop-

ments and make necessary requirements for its installation to aid safety of operation.

The grant of authority here proposed would merely extend the Commission's jurisdiction in the field of safety. I see nothing radical in that, unless every new enactment to promote safety is considered radical. The railroads, generally, have taken the position that every extension of regulatory legislation, such as that covering their rates and charges, the issuance of their securities, and the safety of their operation, is radical, but experience has proved the desirability of all of such regulation.

The maximum speeds of trains have increased substantially in recent years. Many passenger trains now have maximum speeds of 90, 95, and even 100 miles per hour or more. We have power under section 25, indirectly and partially, to regulate speeds by requiring the installation of additional and more effective safety systems at the higher speeds. This we have done in our Docket 29543, where, among other things, we have required the installation of train-stop, train-control, or cab-signal systems where trains are operated at speeds of 80 or more miles per hour. However, once such systems have been installed, we have no control over the speeds, even though bridge, track, roadbed, or other conditions may be such that existing speeds are inconsistent with safe operation.

The number and severity of accidents to track motorcars has been increasing. The Commission is without authority to prescribe rules for their safe operation. Many of the carriers have not provided such rules, and apparently never will, unless compelled to do so. All of these track motorcars are not small and easily removed from the tracks.

Much stress heretofore has been put on the standard code of operating rules of the Association of American Railroads, and how such rules are made and changed and kept up to date. The association is without authority to require the establishment or observance of a single one of these rules. Whether a particular railroad adopts any or all of them, or some other rules, is wholly within its own discretion. The fact is that this so-called standard code is probably not standard in its entirety on any railroad in the country.

Questions have been raised by witnesses supporting other similar bills, whether enactment of such bills would permit the Commission to prescribe train lengths, the number of employees on trains, grade-crossing protection, or the building of new bridges, and require the railroads to rearrange their clearances to meet standards that the Commission might set up. This bill, as I read it, is limited to rules with respect to the devices mentioned in the bill.

The bill, amended as here suggested, would only permit the Commission to require the establishment and maintenance of operating rules, regulations, and practices intended to promote safety of operation. I have had many years of experience in connection with the operation of trains, either directly as an employee of the railroads, or indirectly as an employee in and Director of the Commission's Bureau of Safety, and as Commissioner in charge of that Bureau and the Bureau of Locomotive Inspection. It is my considered judgment that, in the main, the operating rules, regulations, and practices of the railroads are intended to and do promote the safety of operation.

Some of the rules are good, but are not observed or enforced. In other instances, the rules could be improved. The power to establish rules, regulations, and practices to promote safety of train operation carries with it no authority to require the building of bridges or track structure, provide grade-crossing protection, or require changes in clearances.

Such power, however, might be invoked to require safe operation over bridges or track structure found insufficient or defective, to require certain protection where clearance conditions are unsafe, and to limit speeds over certain grade crossings where adequate protection is not provided. Conceivably, it could be used to regulate train lengths to the extent that the length of a train becomes an important factor in safety of operation. Assuming the train is properly protected, I cannot conceive how the number of employees on a train could be affected by an operating rule, regulation, or practice designed to promote safe operation.

An important thing to be kept in mind is that no change could be ordered in carriers' operating rules until the Commission first found that the existing rules, regulations, or practices resulted in unsafe operation. Such a finding would be made only after a full hearing, if an interested party desires a hearing, for it is and has always been the policy of the Interstate Commerce Commission not to enter mandatory orders until everyone concerned has had a full opportunity to be fully heard.

The railroads in the past have produced much evidence before this committee concerning the power that would be delegated to the Commission with respect to rules, regulations, and practices concerning the operation of trains under a bill of this nature, if it became a law. Let us see what, as a practical matter, would happen.

Each railroad subject to the act would be required to file with the Commission its rules and regulations, and we are dealing here with individual railroads. If such rules are as good and safe as their evidence indicates them to be, and they are observed and enforced, there would be nothing for the Commission to do. There is nothing it could do. It is only when its rules, regulations, or practices are inadequate or create unsafe conditions that the Commission has power to take corrective action, and then only if a particular railroad declines or neglects to make proper correction.

Mr. Chairman, that is all of my direct.

Senator BRICKER. You have submitted here, then, a bill revised according to your testimony?

Mr. PATTERSON. That is right. The bill is included.

Senator BRICKER. Then, what is the remainder of the attachment? Is that the investigation of the five cases you cited earlier?

Mr. PATTERSON. Yes. There are six, I think.

Senator BRICKER. Do you want those to be made a part of the record?

Mr. PATTERSON. I think they should be.

Senator BRICKER. Without objection, they will be inserted in the record at this point.

(The material referred to is as follows:)

S. 1401 REVISED

(Additions in italic)

A BILL To authorize the Interstate Commerce Commission to require carriers engaged in interstate commerce by railroad to install power *or train* brakes which comply with specifications and requirements prescribed by the Commission and to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power *or train* brakes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section *2 of the Act of March 2, 1903 (ch. 976, sec. 2, 32 Stat. 943; 45 U. S. C., title 45, ch. 1, secs. 1–16) is amended as follows:*

That whenever, as provided in said Act, any train is operated with power or train brakes, not less than 50 per centum of the cars in such train shall have their brakes used and operated by the engineer of the locomotive drawing such train; and all power-braked cars in such train which are associated together with said 50 per centum shall have their brakes so used and operated; and, to more fully carry into effect the objects of said Act, the Interstate Commerce Commission may, from time to time, after full hearing, increase the minimum percentage of cars in any train required to be operated with power or train brakes which must have their brakes used and operated as aforesaid.

The Interstate Commerce Commission may, after investigation, if found necessary in the public interest, order any carrier engaged in interstate commerce by railroad to install power or train brakes which comply with specifications and requirements prescribed by the Commission.

Each common carrier engaged in interstate commerce by railroad shall file with the Commission within three months after the enactment hereof its rules, standards, and instructions for the installation, inspection, maintenance, and repair of the power or train brakes covered by this section, and, after approval of the Commission, such rules, standards, and instructions, with such modifications as the Commission may require, shall become obligatory upon the carrier: Provided, however, That if any such carrier shall fail to file its rules, standards, and instructions the Commission shall prepare rules, standards, and instructions for the installation, inspection, maintenance, and repair of such systems, devices, and appliances to be observed by such carrier, which rules, standards, and instructions, a copy thereof having been served on the president, chief operating officer, trustee, or receiver, of such carrier, shall be obligatory: Provided further, That such carrier may from time to time change the rules, standards, and instructions herein provided for, but such change shall not take effect and the new rules, standards, and instructions be enforced until they shall have been filed with and approved by the Commission: And provided further, That the Commission may on its own motion, upon good cause shown, revise, amend, or modify the rules, standards, and instructions prescribed by it under this section, and as revised, amended, or modified they shall be obligatory upon the carrier after a copy thereof shall have been served as above provided.

The provisions and requirements of this section shall be held to apply to all trains, locomotives, tenders, cars, and similar vehicles used, hauled, or permitted to be used or hauled by any railroad engaged in interstate commerce; and failure to comply with any such *requirements* of the said Interstate Commerce Commission shall be subject to the like penalty as failure to comply with any *requirements* of this section.

S. 539 REVISED

(Changes in italic)

A BILL To authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) subsections (b) and (c) of section 25 of the Interstate Commerce Act (49 U. S. C., sec. 26 (*b*) and 26 (*c*)) are amended to read as follows:

"(b) The Commission may, after investigation (and with respect to mandatory orders, after hearing, if a hearing is requested by any interested party), if sound necessary in the public interest, order any carrier within a time specified in the order, and with respect to the whole or any part of its railroad, (1) to install the block signal system, interlocking, automatic train stop, train control, and/or cab-signal devices, and/or other similar appliances, methods, and systems intended to promote the safety of railroad operation (including telegraph, telephone, radio,

inductive, or other wayside and/or train-communication systems), which comply with specifications and requirements prescribed by the Commission, and (2) to establish, maintain, and observe rules and regulations for the operation of trains in connection with the above-named devices, appliances, methods, and systems, intended to promote safety of railroad operation, *in use on the date of the enactment of this amendatory provision or hereafter installed*, such order to be issued and published a reasonable time (as determined by the Commission) in advance of the date for its fulfillment: *Provided*, That block signal systems, interlocking, automatic train stop, train control, cab-signal devices, and telegraph, telephone, radio, inductive, or other wayside and/or train-communications systems *in use on the date of the enactment of this amendatory provision or hereafter installed* may not be discontinued or materially modified by carriers without the approval of the Commission: *Provided further*, That a carrier shall not be held to be negligent because of its failure to install such systems, devices, appliances, methods, rules, or regulations upon a portion of its railroad not included in the order, and any action arising because of an accident occurring upon such portion of its railroad shall be determined without consideration of the use of such systems, devices, appliances, methods, rules, or regulations upon another portion of its railroad: *And provided further*, That any order of the Interstate Commerce Commission directing any carrier to take action that requires the obtaining of a radio wave band or frequency, station permit, or license under the Communications Act of 1934, as amended, shall be issued subject to the granting by the Federal Communications Commission of the required authorization. The carrier to which such order of the Interstate Commerce Commission applies shall, within such time as may be specified therein, make application to the Federal Communications Commission for such authorization. If and when such authorization is granted the carrier shall comply with the order of the Interstate Commerce Commission, subject, however, to such conditions as may be imposed by the Federal Communications Commission and to the provisions of the Communications Act of 1934, as amended, and the rules and regulations prescribed thereunder, including the right of the Federal Communications Commission to modify, suspend, revoke, or refuse to renew the license or other authorization so granted when the public interest, convenience, or necessity so requires.

"(c) Each carrier shall file with the Commission its rules, standards, and instructions for the installation, inspection, maintenance, and repair of the systems, devices, and appliances covered by this section *within six months after the enactment of this amendatory provision*, and, after approval by the Commission, such rules, standards, and instructions, with such modifications as the Commission may require, shall become obligatory upon the carrier: *Provided, however*, That if any such carrier shall fail to file its rules, standards, and instructions the Commission shall prepare rules, standards, and instructions for the installation, inspection, maintenance, and repair of such systems, devices, and appliances to be observed by such carrier, which rules, standards, and instructions, a copy thereof having been served on the president, chief operating officer, trustee, or receiver, of such carrier, shall be obligatory: *Provided further*, That such carrier may from time to time change the rules, standards, and instructions herein provided for, but such change shall not take effect and the new rules, standards, and instructions be enforced until they shall have been filed with and approved by the Commission: *And provided further*, That the Commission may on its own motion, upon good cause shown, revise, amend, or modify the rules, standards, and instructions prescribed by it under this subsection, and as revised, amended, or modified they shall be obligatory upon the carrier after a copy thereof shall have been served as above provided. Each carrier shall file with the Commission its rules and regulations for the operation of trains in connection with the devices, appliances, methods, and systems covered by this section within three months *after the enactment of this amendatory provision* and shall thereafter file with the Commission any revision, amendment, or modification of such rules and regulations within thirty days after the effective date of such revision, amendment, or modification."

"(d) The Commission is authorized to inspect and test any systems, devices, and appliances referred to in this section used by any such carrier and to determine whether such systems, devices, and appliances are in proper condition to operate and provide adequate safety. For these purposes *and to carry out the other purposes of this amendatory provision*, the Commission is authorized to employ persons familiar with the subject. Such persons shall be in the classified service and shall be appointed after competitive examination according to the law and the rules of the Civil Service Commission governing the classified service. No person inter-

ested, either directly or indirectly, in any patented article required to be used on or in connection with any of such systems, devices, and appliances or who has any financial interest in any carrier or in any concern dealing in railway supplies shall be used for such purpose. Nothing in this section shall affect the powers of the Federal Communications Commission to make any inspection or examination of equipment utilizing radio frequencies or radio frequency energy in accordance with the provisions of the Communications Act of 1934, as amended, or the rules and regulations of the Federal Communications Commission."

INTERSTATE COMMERCE COMMISSION

Ex parte No. 184

ACCIDENT AT UNION STATION, WASHINGTON, D. C.

Submitted January 29, 1953. Decided February 17, 1953

Accident at Union Station, Washington, D. C., on January 15, 1953, caused by a train moving out of control as a result of the brakes on the rear 13 cars being inoperative from the locomotive because of a closed angle cock at the rear of the third car.

Edward R. Brumley for the New York, New Haven and Hartford Railroad Company.

George E. Hamilton, Jr., and *John L. Hamilton* for the Washington Terminal Company.

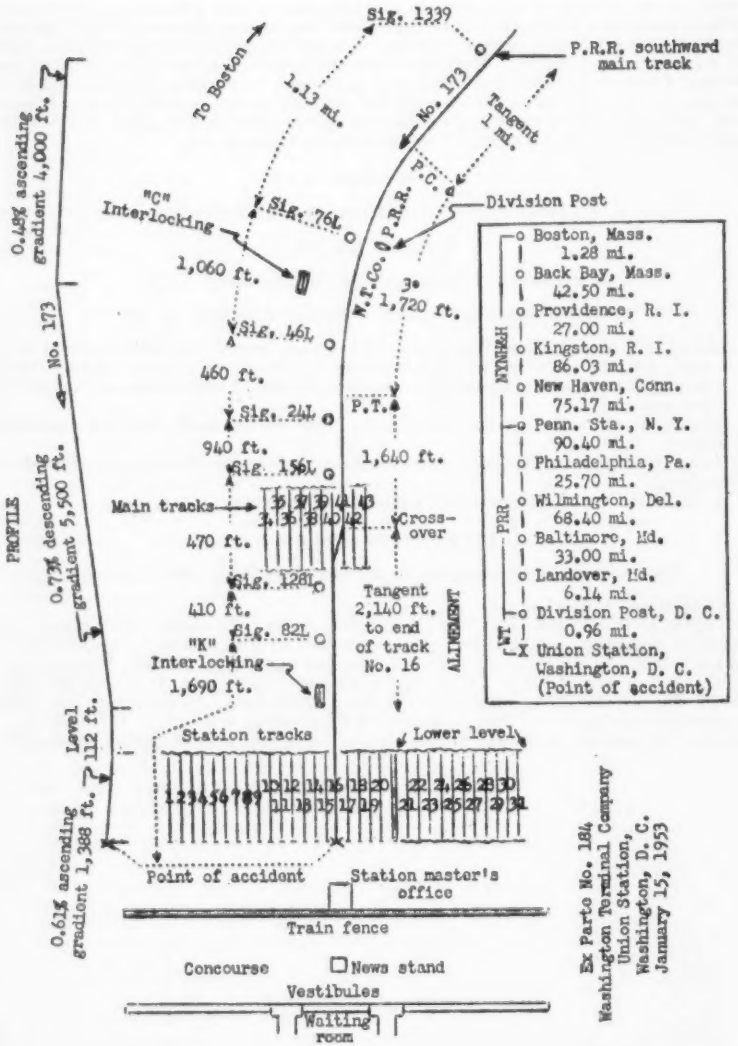
A. Schroeder for the Pennsylvania Railroad Company.

REPORT OF THE COMMISSION

DIVISION 3, COMMISSIONERS PATTERSON, JOHNSON, AND KNUDSON

PATTERSON, *Commissioner:*

This is an investigation by the Commission on its own motion with respect to the facts, conditions, and circumstances connected with an accident which occurred on the line of the Washington Terminal Company at Union Station, Washington, D. C., on January 15, 1953. Hearing was had at Washington, D. C., on January 26, 27, 28, and 29, 1953. The accident was a derailment of a passenger train and resulted in the injury of 62 passengers, 9 licensees in and about the station, 4 Pullman Company employees, 1 train-service employee, and 11 station employees.



LOCATION OF ACCIDENT AND METHOD OF OPERATIONS

This accident occurred on that part of the railroad extending between division post, 0.96 mile north of Union Station, and Union Station, Washington, D. C. Passenger trains of the Pennsylvania Railroad operating into and out of Union Station operate over its Maryland division between Baltimore, Md., and division post, and over the Terminal Co. between division post and Union Station. Both lines are provided with a catenary system for the electric propulsion of trains. North of division post, the Maryland division of the Pennsylvania is a double-track line over which trains are operated by automatic block-signal and cab-signal indications supplemented by an automatic speed-control system. Between C interlocking, located immediately south of division post, and the north limits of

K interlocking, 0.47 mile south of division post, the line of the Terminal Co. is a 10-track line over which trains are operated by signal indications. These tracks are designated from west to east as tracks Nos. 34 to 43, inclusive. Within interlocking limits at K interlocking these tracks converge with 31 station tracks which are designated from west to east as tracks Nos. 1 to 31, inclusive. The accident occurred at the south end of track No. 16. Tracks Nos. 1 to 20, inclusive, enter the station at street level and are stub end tracks. The other tracks enter the station at a lower level. A southbound train moving on track No. 41 enters track No. 16, which is in line with track No. 40, through a facing-point crossover located 2,140 feet north of the south, or stub end of track No. 16. Each end of this crossover is provided with No. 8 double-slip switches and movable-point frogs. From the north, via the southward main track of the Pennsylvania, track No. 41, and track No. 16, there are, in succession, a tangent more than 1 mile in length, a 3° curve to the left 1,720 feet, a tangent 1,640 feet to the crossover between tracks Nos. 41 and 16, and a tangent 2,140 feet from the crossover to the stub end of track No. 16. From the north the grade is, successively, 0.48 percent ascending 4,000 feet, 0.73 percent descending 5,500 feet, level 112 feet, and 0.16 percent ascending 1,388 feet to the stub end of track No. 16.

Automatic signal 1339, governing southbound movements on the southward main track of the Pennsylvania, semiautomatic signals 76L, 46L, 24L, and 156L, governing southbound movements on track No. 41, and semiautomatic signals 128L and 82L, governing southbound movements on track No. 16, are located, respectively, 2.09 miles, 5,030 feet, 3,970 feet, 3,510 feet, 2,570 feet, 2,100 feet, and 1,690 feet north of the stub end of track No. 16. Signal 1339 is of the position-light type, and the other signals are of the color-position-light type.

The automatic cab-signal system and the automatic speed-control system in use on the Pennsylvania are so arranged that if a train passes a signal indicating "Approach" at a speed in excess of 30 miles per hour a full-service brake-pipe reduction will be made automatically unless the engineer immediately makes a service brake-pipe reduction of predetermined value. After the speed has been reduced to 30 miles per hour or less the brakes may be released, but they will again become applied if a speed of 30 miles per hour is exceeded while the train is moving on an "Approach" cab-signal indication. If a train passes a signal requiring movement at restricted speed the device functions in the same manner except that the speed is restricted to 20 instead of 30 miles per hour. The automatic speed-control equipment on a locomotive may be made inoperative by the engineer while the locomotive is operating over lines not equipped for automatic cab-signal operation.

At the stub end of track No. 16 an all-steel bumping post is bolted to the track rails. The bumper face is approximately 6 feet north of the ends of the rails and 2 feet 10 inches above the level of the tops of the rails. An ornamental wrought-iron train fence separates the south ends of the station platforms from the passenger concourse. This fence is located 61.5 feet south of the ends of the tracks and is at right angles to the tracks. The passenger concourse is 760 feet in length and 84.7 feet in width. Several vestibules at the south side of the concourse and opposite the ends of tracks Nos. 12 to 20, inclusive, afford passageway between the concourse and the main waiting room of the station.

The maximum authorized speed for south bound passenger trains is 80 miles per hour on the main track of the Pennsylvania, 25 miles per hour between signal 76L and signal 156L, and 15 miles per hour between signal 156L and the station platforms at Union Station.

DESCRIPTION OF ACCIDENT

No. 173, a southbound first-class Pennsylvania passenger train designated as the "Federal," consisted of electric locomotive 4876, 3 coaches, 1 combination baggage-coach, and 12 sleeping cars, in the order named. The first three cars and the 6th, 9th, 10th, 13th, 14th, and 16th cars were of lightweight steel construction and were equipped with tightlock couplers. The other cars were of conventional all-steel construction, and were equipped with type E couplers except the 4th, which was equipped with Pitt couplers. The train passed Landover, 7.1 miles north of Union Station and the last open office on the line of the Pennsylvania, at 8:30 a. m., 20 minutes late, passed C interlocking on track No. 41 at 8:36 a. m., 19 minutes late, crossed from track No. 41 to track No. 16 at K interlocking, and while moving at an estimated speed of 35 to 40 miles per hour it struck the bumping post and was derailed at the stub end of track No. 16.

The locomotive demolished the bumping post and a portion of the train fence and entered the concourse. It broke through the floor of the concourse and stopped with the front end suspended in the wreckage of the floor and opposite the end of track No. 15 and a few feet north of the south wall of the concourse. The rear end of the locomotive dropped to the floor of the baggageroom below the concourse and stopped about 65 feet south of the stub end of track No. 16. The first car stopped with the front end against the rear end of the locomotive and the rear end suspended over the end of track No. 16. A separation occurred between the first and second cars. The second car stopped approximately in line with track No. 15, with its front end about 100 feet south of the end of that track. The front end broke through the floor of the concourse, but did not drop to the floor of the baggage room. The third car stopped with the rear end on the track structure of track No. 16. All of these cars remained upright. The fourth, fifth, and sixth cars were derailed by the force of the impact. They stopped upright and approximately in line with track No. 16.

The locomotive was considerably damaged. The entire body and underframe of the first car were twisted, and there was extensive damage to both the inside and the outside of the body and to the appurtenances below the floor level. The front end of the second car was crushed and torn, the right side of the body was bent and twisted, and there was extensive damage to the interior and to the appurtenances below the floor level. The third car was not badly damaged. The fourth, fifth, and sixth cars were slightly damaged.

The fireman of No. 173 and 11 station employees of the Washington Terminal Co. were injured.

The locomotive of No. 173 was equipped with 8EL brake equipment. The regulatory devices were adjusted to supply brake-pipe pressure of 110 pounds. The first three cars and the 6th, 9th, 10th, 13th, 14th, and 16th cars were equipped with D22 brake equipment. The other cars were equipped with UC brake equipment.

The weather was clear at the time of the accident, which occurred about 8:38 a. m.

DISCUSSION

No. 173 originates at Boston, Mass., and is operated over the New York, New Haven, and Hartford Railroad from Boston to Pennsylvania Station, New York, N. Y., 231.98 miles, and over the Pennsylavnia and the Washington Terminal thence to Union Station, Washington, D. C., 224.6 miles. On the day of the accident this train departed from Pennsylvania Station at 4:38 a. m., 36 minutes late. A terminal test of the brakes was made before the train departed and the brakes functioned properly when used in controlling the speed of the train at various points and in making station stops at Philadelphia, Pa., Wilmington, Del., and Baltimore, Md., 90.4 miles, 116.1 miles, and 184.5 miles, respectively, south of Pennsylvania Station. After the train departed from Baltimore, at 7:59 a. m., the engineer did not have occasion to use the brakes until the train was passing signal 1339, which indicated "approach." At this time the speed was between 60 and 70 miles per hour. As the train passed the signal the indication of the cab signal changed to "approach" and the cab-signal whistle sounded until it was acknowledged by the engineer. The engineer moved the controller from the 10th or 12th notch to the 5th notch and made a split brake-pipe reduction of 17 pounds. The initial reduction was between 5 and 7 pounds, and the reduction was then increased to a total of 17 pounds. The engineer did not notice that the exhaust from the brake valve was unusually short, but when the train reached a point about 3,600 feet south of the signal he observed that the speed of the train was not being reduced in a normal manner. He then moved the controller to "Off" position and placed the automatic brake valve in emergency position. The exhaust from the brake valve was short and the emergency application apparently had no more effect in reducing the speed of the train than the service application had. He then notified the fireman that the brakes were not effective and, as the train approached C interlocking, he began to sound the pneumatic horn in an effort to warn other employees that the train was out of control. The sander valve was open during this time. When the front of the train reached a point about 1,500 feet north of the stub end of track No. 16 the engineer attempted to reverse the motors, but the overload relays immediately functioned and this action did not effect any further reduction in speed. He estimated that the locomotive struck the bumping post while moving at a speed of about 35 miles per hour.

As the train passed signal 1339, the fireman heard the cab-signal whistle sound until it was acknowledged by the engineer. At the same time he heard the sound

of the exhaust as the engineer made a brake application. He did not notice the length of the exhaust. When the train reached a point about 3,600 feet south of the signal, he observed that the speed of the train was excessive, and, at the same time, the engineer told him that the brakes were not effective. He immediately opened the emergency brake valve on the fireman's side of the control compartment. There was no exhaust from the valve. He observed that the automatic brake valve was in emergency position, and the independent brake valve was in application position. He then crossed to the engineer's side of the control compartment and observed that the gages indicated that the brake-pipe pressure had been depleted and that the brake-cylinder pressure was about 70 pounds. These are the normal indications after an emergency application of the brakes has been made. The fireman thought that the speed was between 35 and 40 miles per hour at the time the locomotive struck the bumping post.

The conductor thought there was a brake application before the train reached C interlocking, but as the train was closely approaching the interlocking, he became aware that the speed was excessive. He proceeded to the front vestibule of the third car, and, after he entered it, he heard the sound of the horn of the locomotive. He immediately opened the conductor's backup valve, but there was no exhaust and no appreciable reduction in speed. He then returned to the interior of the third car and warned the passengers to remain in their seats and to be prepared for an abrupt stop.

The front brakeman proceeded from the baggage compartment to the passenger compartment of the fourth car as the train was passing through C interlocking. When he became aware that the speed was excessive, he proceeded to the rear vestibule with the intention of opening the conductor's backup valve, but because of the lurching of the car and his difficulty in keeping his footing, he was not certain whether he succeeded in opening the valve before the accident occurred. It is apparent that he did not.

The flagman was in the rear car, and he first became aware that the speed was excessive when that car moved through the crossover at K interlocking. At that time he was in the center of the car. Because of passengers in the aisle preparing to leave the train, he was unable to reach the emergency valve at either end of the car before the accident occurred. Neither the front brakeman nor the flagman heard the sound of the pneumatic horn of the locomotive.

An employee who was not on duty was riding in the third car of the train. As it was passing through C interlocking he noticed that the speed was excessive. He immediately opened the emergency valve at the rear of the car. There was no exhaust from the valve.

As No. 173 was passing C interlocking the assistant train director observed that it was moving much faster than usual. Because of other movements between the interlocking station and the track on which No. 173 was moving, he was unable to determine whether there were any indications that the brakes of the train were applied. He immediately informed the train director at K interlocking that it appeared doubtful that the engineer of No. 173 would be able to stop the train short of a stop signal at K interlocking. The train director at K interlocking instructed the leverman to line the route for the train to enter track No. 16, the regularly assigned track for this train. The leverman lined the route for movement from signal 156L to signal 128L and lined the switches beyond signal 128L for movement to track No. 16. No. 173 passed signal 128L before the leverman had had time to clear the signal. When the train director observed the speed at which No. 173 was approaching, the locomotive had already entered the crossover and there was insufficient time to change the positions of any of the switches beyond signal 128L. He immediately warned the employees in the station master's office, which is located near the stub end of track No. 16, that the train appeared to be out of control. He observed that sparks were flying from the wheels and brake shoes of the locomotive but was unable to determine whether the brakes were applied on the cars of the train.

Examination of the equipment after the accident occurred disclosed that the engineer was successful in obtaining an emergency application of the brakes on the locomotive and the first three cars of the train but no effective brake application was obtained on the other cars. The treads of the wheels of the locomotive showed numerous skid marks and considerable built-up metal, indicating that the wheels had received very heavy braking shortly before they stopped. The wheels of the first three cars were extremely hot when the train stopped. When the wheels were examined between 1 hour and 1 hour 30 minutes later they were found to be unusually hot considering the length of time which had elapsed after the accident occurred. There was evidence of built-up metal on

the treads and at the rims of the wheels, and a number of the brake shoes were worn almost to the shoe heads. Globules of cooled molten metal hanging on the brakeshoes and heads indicated that the brakeshoes had been very hot. The fact that there was no exhaust when the conductor's valve in the third car was opened also indicates that the brake-pipe pressure had been depleted and an emergency application of the brakes from the front of the train to and including the third car had been obtained at that time. The wheels and brakeshoes of the fourth car and the cars behind the fourth car showed no indications of recent abnormally heavy braking. The flagman of No. 173 inspected the brakes of the 15th and 16th cars immediately after the train stopped and found that they were in release position.

Shortly after the accident occurred a yard engine was coupled to the rear of the train, the air hose between the engine and the rear end of the rear car were coupled, and the angle cocks between the engine and the rear car opened. The angle cocks between the 6th and 7th cars were then closed and the 7th to the 16th cars, inclusive, were removed. No test was made to determine the extent to which the air-brake system of the rear portion of the train was charged prior to the time the angle cocks between the yard engine and the rear car were opened.

Between 20 and 30 minutes after the yard engine departed with the rear cars an employee attempted to separate the air hose between the 3d and 4th cars. He found that there was a considerable amount of air pressure in the hose and the hose could not be separated easily. In order to release the air pressure, he opened the emergency valve at the front end of the 4th car. There was a forceful exhaust when he opened the valve, and the brakes of the 4th, 5th, and 6th cars became applied. He then discovered that the handle of the angle cock at the rear end of the 3d car had been moved about 80 degrees from fully open position.

Another employee cut off the end of the brake pipe and the U bolt securing the angle cock to the supporting bracket and removed the angle cock from the car in an attempt to maintain the handle in the position in which it was found. However, he dropped the angle cock to the ground in the process of removing it from the car, and apparently the handle was moved either when the angle cock was dropped or when it was handled after being removed. Tests of the angle cock after it was removed disclosed that the port opening was sufficient to permit the charging of the air-brake system of several cars through the angle cock and to obtain both service and emergency brake applications on these cars. Before No. 173 stopped, an emergency brake application was obtained on the first three cars, but no effective brake application was obtained behind the third car. After the yard engine and the rear 10 cars were detached, the air-brake system of the 4th, 5th, and 6th cars remained charged during a period of between 20 and 30 minutes. During this time the brake pipe ahead of the third car was open. These facts indicate that the angle cock at the rear of the third car was closed before the train stopped and that the handle was moved between the time it was first observed and the time the angle cock was tested after it was removed. Tests of a similar angle cock disclosed that a slight change in the position of the handle made a considerable difference in the port opening. With the handle moved 50 degrees from fully open position an emergency brake application could be obtained through the angle cock, and with the handle moved 65 degrees from fully open position the port was completely closed.

As the wreckage was being removed, it was found that the angle cock was broken off the rear end of the first car and that the handle was latched in fully closed position. However, it is evident that this angle cock was closed as a result of being struck by wreckage during the derailment. The rear end of the first car was considerably damaged, and both the body and the handle of the angle cock bore marks indicating that they had been struck several severe blows. If this angle cock had been closed before the derailment occurred, the engineer would not have been successful in obtaining an emergency brake application on the 2d and 3d cars.

After the 4th, 5th, and 6th cars were rerailed, the rear 13 cars of the train were assembled in the order in which they had been assembled in No. 173. In order to complete a 16-car train, 3 coaches similar to the first 3 cars of No. 173 were substituted for the original first 3 cars. The angle cock which had been removed from the rear end of the 3d car was placed at the rear end of the new 3d car with the handle in what was thought to be the position in which it was found following the derailment. There was no difficulty in charging the rear portion of this train through this angle cock nor in making service and emergency brake applications. After the air-brake system was charged to 110 pounds pressure, a leakage test

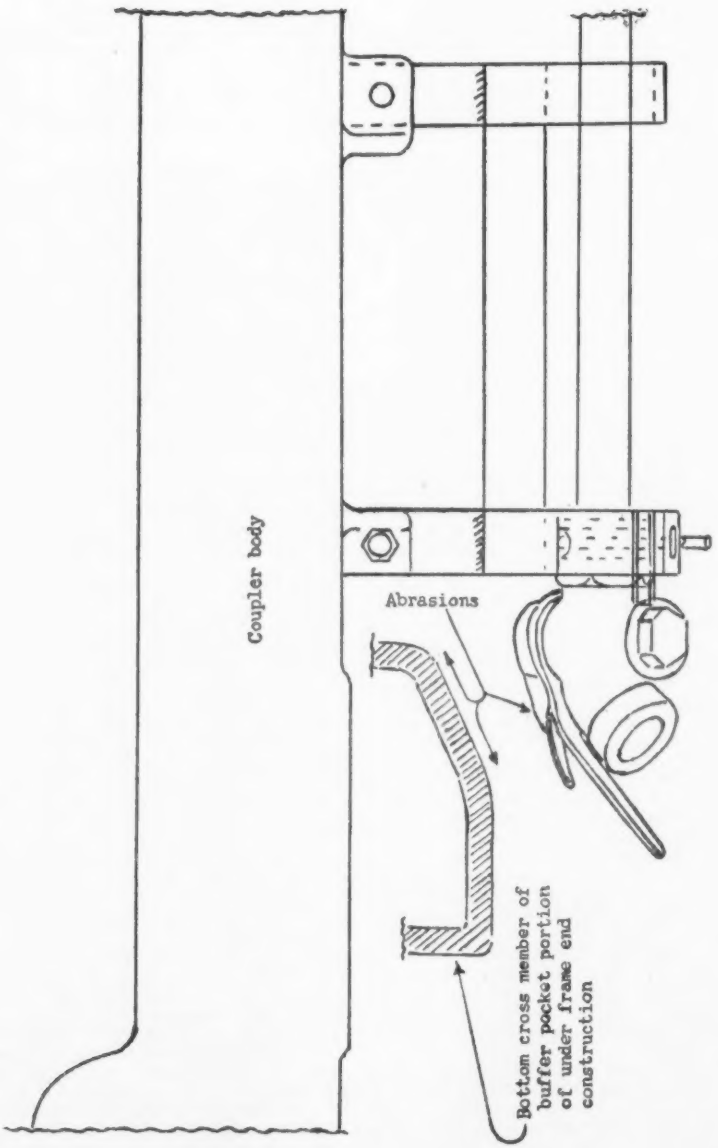
showed that the leakage was approximately 1 pound per minute. Single-car tests then were made of each of the rear 13 cars, and the brakes were found to function properly. After these tests were completed, the air hose, the armored brake-pipe hose, and the brake-cylinder hose were removed from each of the rear 13 cars, and the hose which were not damaged as a result of the derailment were removed from each of the original first 3 cars. Inspection disclosed that all of these hose were in good condition and free of obstruction. The automatic brake valve, the feed valve, the independent brake valve, the rotair valve, the distributing valve, and the governor were removed from locomotive 4876 and placed on another locomotive of similar type. They were then tested and were found to function properly.

The angle cock at the rear end of the third car, which was found to be in closed position after the accident occurred, had previously been found in closed position while the train was en route from Boston to New York on the New Haven. The train departed from Boston on January 14, at 11 p. m., on time. A terminal test of the brakes was made before the train departed, and the brakes functioned properly when used in controlling the speed at various points and in making station stops at Back Bay, Mass., and Providence, R. I., 1.28 and 43.78 miles west of Boston, respectively. The train was stopped a short distance west of Kingston, R. I., 70.78 miles west of Boston, because the brakes were sticking on the rear two cars. When it was found that the brakes could not be released from the locomotive, the engineer made an inspection of the train and discovered that the angle cock at the rear of the third car was in fully closed position. He opened the angle cock and latched it in that position and the brakes then functioned properly. Locomotives were changed and three cars added to the rear of the train at New Haven, Conn., 156.81 miles from Boston. The brakes were tested before departure and functioned properly when used between New Haven and Pennsylvania Station. There was no change in the consist of the train at Pennsylvania Station except that the locomotives were changed. Car inspectors who inspected the train at Pennsylvania Station found no defective condition. They made a routine inspection of the train and were certain that they would have noticed any angle cock on which the handle was unlatched or moved from fully open position.

After the accident occurred the angle cock and air hose at the rear end of the third car were removed before the car was examined thoroughly. Upon examination of the second car, New Haven 8643, which was of the same construction as the third car, it was found that the angle cocks were located directly under the bottom cross members of the buffer pocket portions of the underframe end construction. The angle cock supporting brackets are rigidly attached to and follow the longitudinal, vertical, and lateral movements of the coupler bodies. With the car uncoupled and the coupler at the undamaged end in normal coupling position the clearance between the top of the angle-cock handle and the bottom of the bottom cross member of the buffer pocket was 2 inches and that between the top of the coupler head and the bottom of the top cross member was 3⅝ inches. Because of this difference in clearance the angle cock handle was permitted to come in contact with the bottom cross member on upward movement of the coupler before the coupler head would come in contact with the top cross member. The angle cock was located directly under the bottom cross member instead of 4½ inches back of the inside face of that member as specified by the New Haven. The coupler, angle-cock bracket, and underframe end construction at this end of the second car were not damaged during the derailment and there were no indications that the angle cock had been moved as a result of the accident.

An abrasion mark was found on the top of the handle just above the thumb release of the double-locking angle cock on the undamaged end of the second car. Abrasion marks were also found on the bottom side of the bottom cross member, showing that the handle of the angle cock had been coming in contact with the cross member. Examination of the rear end of the third car disclosed abrasion marks on the bottom cross member similar to and in approximately the same location as those on the second car. Examination of the angle cock which had been removed from the rear end of the third car after the accident disclosed an abrasion on the top of the handle similar to that found on the angle cock of the second car. There were also abrasion marks showing that the coupler heads of the 2d and 3d cars had been coming in contact with the top cross members of the buffer pockets.

The fourth car was equipped with conventional type couplers having a vertical clearance of ⅝ inch in the coupler carrier assembly. The spring assembly in the 4-wheel trucks of this car had a total deflection of 3.67 inches. The 3d car was equipped with tightlock couplers requiring a minimum vertical clearance of 3


Coupler body
Abrasions
Bottom cross member of buffer pocket portion of under frame end construction

inches above and 3 inches below the coupling line and was equipped with 4-wheel trucks having a spring assembly with a total deflection of $7\frac{13}{16}$ inches. This contrast in design of couplers and truck-spring assemblies of New Haven cars 8665 and 6103 undoubtedly resulted in a considerable increase in the frequency and intensity of oscillations and vibrations transmitted to the coupler body and the attached angle cock at the rear end of car 8665 while the train was in motion.

The abrasion marks on the handle of the angle cock and the bottom cross member at the rear of car 8665 show that the handle had repeatedly come in contact with the cross member. As the angle cock was so located that contact could be made while the coupler body and the angle cock were moving vertically and either longitudinally or laterally, it is apparent that as a result of these contacts the handle was unlatched and moved toward closed position a sufficient distance to close the angle cock. Tests were made on a car of similar construction by manually manipulating the coupler with a bar, and the handle of the angle cock was moved toward closed position as a result of contact between the handle and the cross member.

If an angle cock is closed after the air-brake system of a train is fully charged, leakage in the air-brake system frequently will cause the brakes of the cars behind the closed angle cock to begin to apply after a period of several minutes. However, if the rate of leakage is very low, it is possible that the brakes of the cars behind the closed angle cock will remain in release position during a considerable period of time. After an angle cock is closed, except on trains equipped with electropneumatic brakes, the brakes of the cars behind the closed angle cock cannot be applied from the locomotive, either by manipulation of the engineer's brake valve or by the functioning of a speed-control system. If this should occur while the brakes of a train are released, the engineer would not be aware that the brakes behind the closed angle cock could not be applied from the locomotive unless a brake test was made after the angle cock was closed or he attempted to reduce the speed of the train by use of the brakes. When operating as intended, electropneumatic train brakes permit the locomotive engineer to apply the brakes behind a closed angle cock as service application is controlled on each car simultaneously by application and release magnets which are energized by current transmitted from car to car through cables.

We find that:

1. The angle cocks on New Haven car 8665 and other cars of similar construction are so located that the handles of the angle cocks are permitted to come in contact with the bottom cross member of the buffer pocket portion of the underframe end construction.

2. Between the time the brakes of No. 173 were released after the train stopped at Baltimore and the time the engineer attempted to apply the brakes as the train approached Washington the angle cock at the rear of car 8665, the third car of train No. 173, became closed, obviously as a result of contact between the handle and the bottom cross member, and after this occurred the brakes of the rear 13 cars of the train could not be applied from the locomotive.

3. The engineer was not aware of the condition of the air-brake system until he attempted to reduce the speed of the train by the use of the air brakes.

4. Because the air brakes of the rear 13 cars could not be applied from the locomotive after the angle cock became closed, the engineer was not able to stop the train short of the end of station track No. 16.

5. The two train-service employees who were in cars behind the third car did not become aware of the necessity of making an emergency brake application until it was too late for them to take effective action.

RECOMMENDATION

We recommend that all passenger train cars equipped with tightlock or similar type couplers operated over any railroad subject to the Interstate Commerce Act be inspected immediately, and that such cars on which any angle cock is so located that the handle can come into contact with any other portion or appurtenance of the car be withheld from service until such condition is corrected.

KNUDSON, *Commissioner*, concurring:

I approve only the statements of fact and the findings in this report.

By the Commission, Division 3.

[SEAL]

GEORGE W. LAIRD,
Acting Secretary.

INTERSTATE COMMERCE COMMISSION

Report No. 3501

In the Matter of Making Accident Investigation Reports Under the Accident Reports Act of May 6, 1910

WABASH RAILROAD COMPANY
AND
TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS

March 19, 1953

Accident at May Street, St. Louis, Mo., on December 26, 1952, caused by a Terminal Railroad Association of St. Louis transfer train moving out of control on a descending grade, as a result of the power brakes on the rear 39 cars and the caboose being inoperative because of a closed angle cock between the twelfth and the thirteenth cars.

REPORT OF THE COMMISSION [1]

PATTERSON, *Commissioner:*

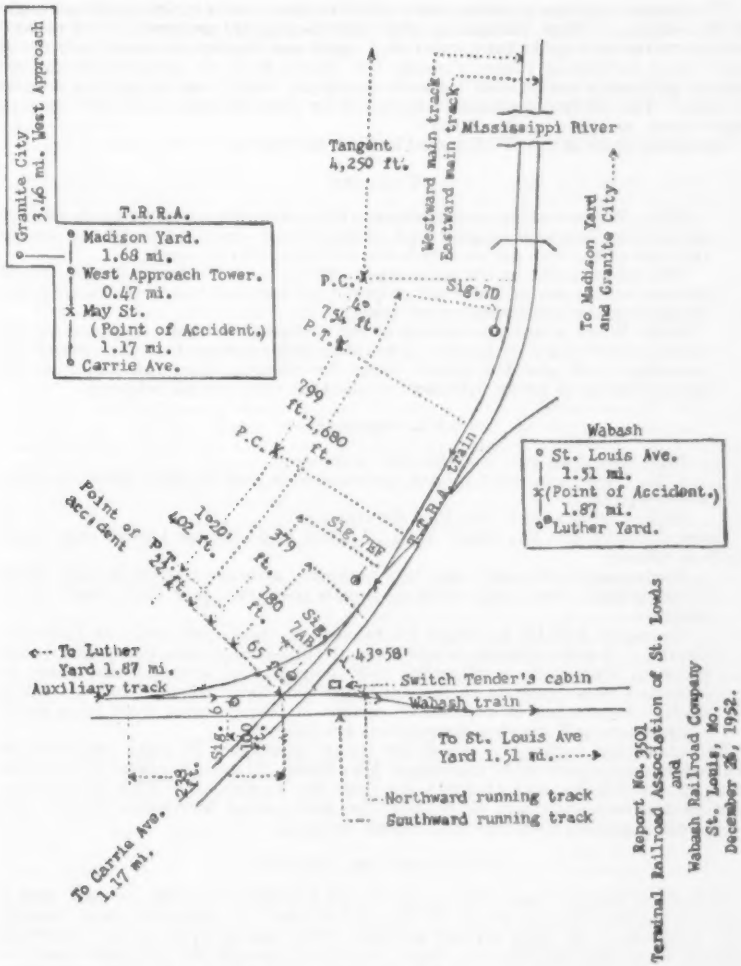
On December 26, 1952, there was a side collision between a transfer train on the Wabash Railroad and a transfer train on the Terminal Railroad Association of St. Louis at May Street, St. Louis, Mo., which resulted in the death of one train-service employee, and the injury of four train-service employees.

LOCATION OF ACCIDENT AND METHOD OF OPERATION

This accident occurred at the intersection of the Wabash Railroad and the Terminal Railroad Association of St. Louis, hereinafter referred to as the T. R. R. A., at May Street, St. Louis, Mo. The crossing is located on that part of the St. Louis Terminal Division of the Wabash extending between Luther Yard, St. Louis, and St. Louis Avenue Yard, St. Louis, 3.38 miles, and on that part of the T. R. R. A. extending between Granite City, Ill., and Carrie Avenue, St. Louis, 5.10 miles. The crossing is 1.87 miles south of Luther Yard and 3.93 miles west of Granite City. The tracks intersect at an angle of 43°58′. In the vicinity of the crossing the line of the Wabash consists of two running tracks, over which movements are made under the jurisdiction of a yardmaster. In the immediate vicinity of the crossing the tracks are tangent and practically level. In the vicinity of the crossing the T. R. R. A. is a double-track line, over which movements with the current of traffic are operated by timetable and an automatic block-signal system. East of May Street this line crosses the Mississippi River on Merchants Bridge, which is approximately 4,200 feet in length. The west abutment of the bridge is about 1,800 feet east of the crossing. From the east there are, in succession, a tangent 4,250 feet in length, a 4° curve to the right 754 feet, a tangent 799 feet, a 1°20′ curve to the right 402 feet, and a tangent 22 feet to the crossing and 97 feet westward. From the east there is a vertical curve 1,279 feet, then the grade is, successively, 0.01 percent descending 621 feet, 1.51 percent descending 1,695 feet, 2.036 percent descending 500 feet, 1.08 percent descending 300 feet, and level 239 feet to the crossing. The northward running track of the Wabash and the westward main track of the T. R. R. A. are connected by an auxiliary track which extends between a switch in the Wabash track 238 feet north of the crossing and a switch in the T. R. R. A. track 180 feet east of the crossing. South of the crossing, a trailing-point crossover connects the two running tracks of the Wabash. The switches are all of the hand-throw type.

Movements over the crossing are governed by interlocking signals. Interlocking signal 6, governing southbound movements on the northward running track of the Wabash, is located 100 feet north of the crossing. Automatic signal 7D and interlocking signals 7EF and 7AB, governing westbound movements on the westward main track of the T. R. R. A., are located, respectively, 1,680 feet,

[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



379 feet, and 65 feet east of the crossing. These signals are of the searchlight type and are continuously lighted. Aspects applicable to this investigation and the corresponding names and indications are as follows:

Signal	Aspect	Indication	Name
6	Yellow	Proceed at restricted speed	Low restricting.
7D	do	Approach next home signal prepared to stop	Caution signal.
7EF 7AB	Red over red	Stop	Stop signal.

The control machine is located at a switchtenders' cabin in the southeast angle of the crossing. Time, indication, and route locking are provided. The control circuits are so arranged that a controlled signal can display an aspect to proceed only when conflicting routes through the interlocking are unoccupied and all signals governing movements through conflicting routes are displaying aspects to stop. The control machine is operated by switchtenders, who also operate hand-throw switches in the vicinity.

Operating rules of the TRRA read in part as follows:

Trainmen

1051. When making up a train on which airbrakes are to be used, all hose connections must be coupled and all angle cocks opened, except the one on the rear of the last car on which the airbrake is to be used.

The release cocks on the auxiliary reservoirs must be closed, the handles of the pressure-retaining valve set properly, the cars cut in and the handbrakes released before the airbrakes are tested.

1052. When a test application of the airbrakes is made, trainmen or car inspectors must see by looking at brake cylinder pistons that they are all set properly; must give the proper signal for releasing the brakes and see by again looking at brake cylinder pistons that they are all released.

Car inspectors

1121. (Same as rule No. 1051 for trainmen.)

1126. Inspectors must inform the conductor and engineer when the tests are completed.

1127. (Same as rule No. 1052 for trainmen.)

General Notice No. 906 dated April 17, 1950, and addressed to all enginemen reads as follows:

Enginemen's terminal inspection regarding airbrake test to be made after coupling up to train and receiving signals that train pipe air is ready to be charged:

Engineers will be governed by request of train crew and car inspector airman. It is the practice of our crews to fully charge train line to 80 pounds pressure, then make a reduction of 20 pounds, and release train brakes as indicated by air gage on engine, train line will charge to gage pressure. The train is then ready to proceed on receipt of proper signal from train crew.

Engineers will see that instructions are followed.

The maximum authorized speeds for freight trains are 20 miles per hour for Wabash movements over the crossing at May Street, 20 miles per hour on the main track of the TRRA, and 10 miles per hour for westbound TRRA movements approaching west approach tower, near the west end of Merchants Bridge, and from west approach tower to May Street crossing.

DESCRIPTION OF ACCIDENT

A Wabash transfer train, consisting of diesel-electric unit 360, 25 cars, and a caboose, entered the line of the TRRA at Granite City, departed from Granite City at 10:46 a. m., and arrived at May Street about 11:02 a. m. After an interval of several minutes this train proceeded through the auxiliary track to the northward running track of the Wabash, then began a reverse movement over the crossing and through the crossover to the southward running track. While it was moving over the crossing at a speed of about 8 miles per hour it was struck by a TRRA transfer train.

A TRRA transfer train, consisting of diesel-electric unit 1215, headed eastward and moving in backward motion, 51 cars and a caboose, departed from Madison yard, Venice, Ill., 2.15 miles east of May Street, about 11 a. m., passed signal 7D, which indicated "Approach," passed signals 7EF and 7AB, each of which indicated "Stop," and while moving at a speed of about 8 miles per hour it struck the front end of the first car and the rear end of the locomotive of the Wabash train.

The locomotive and the first car of the Wabash train and the locomotive, the first 2 cars, and the front truck of the third car of the TRRA train were derailed. The locomotive of the Wabash train stopped at right angles to the TRRA tracks. The rear end was toward the south, 5 feet north of the centerline of the westward main track, and 31 feet west of the point of accident. The locomotive of the TRRA train stopped 12 feet west of the point of accident, across the TRRA

tracks and at right angles to them. The rear end was toward the north. The derailed cars stopped in various positions on or near the crossing. The first car of each train was badly damaged. The other derailed cars were somewhat damaged.

The engineer of the TRRA train was killed. The fireman of the TRRA train and the engineer, the fireman, and one yard brakeman of the Wabash train were injured.

The weather was clear at the time of the accident, which occurred about 11:13 a. m.

Diesel-electric unit 1215 is of the road-switcher type and is equipped with 6BL brake equipment. At the time of the accident the feed valve was adjusted to supply brake-pipe pressure of 80 pounds. The rail-sanding equipment is so arranged that the rails are sanded automatically when the brake valve is placed in emergency position.

DISCUSSION

At the time of the accident the Wabash train was en route from Granite City to St. Louis Avenue yard. The TRRA train was en route from Madison yard to Luther yard. When the Wabash train arrived at May Street a movement through a conflicting route was being made, and the train was stopped at signal 7EF. Several minutes later the train proceeded through the auxiliary track to the northward running track of the Wabash. After this movement was completed, the auxiliary-track switches were restored to normal position. The switchtender lined the route for the train to proceed southward in a backup movement through the interlocking on the northward running track, lined the switches of the crossover south of the crossing for movement through the crossover, and gave a hand signal for the train to move southward. He remained in the vicinity of the crossover, and until the collision occurred he was not aware that the TRRA train had passed signals 7EF and 7AB each of which indicated "Stop."

Members of the crew of the Wabash train said that after the train stopped on the northward running track the indication of signal 6 changed from "Stop" to "Restricting," and that the switchtender gave a hand signal for the train to move southward. As the train moved over the crossing the yard conductor and 1 yard brakeman were on the caboose, and the enginemen and 1 yard brakeman were in the control compartment of the locomotive. None of these employees observed the approach of the TRRA train until immediately before the collision occurred.

As the TRRA train was approaching May Street the speed was between 10 and 15 miles per hour. The enginemen, the yard conductor, and 1 yard brakeman were in the control compartment of the locomotive, and 1 yard brakeman was in the caboose. The brakes of this train had not been tested after the train was assembled at Madison yard and had not been used after the train departed from Madison yard. Signal 7D indicated "Approach," and the indication was called by the enginemen. Surviving employees who were on the locomotive said that the engineer made a service brake-pipe reduction either immediately before or soon after the locomotive passed the signal. Within a few seconds the engineer realized that the brake application was not effective in reducing the speed of the train. He then placed the brake valve in emergency position. The employees on the locomotive then became aware that the train would not stop short of the crossing. The yard brakemen attempted to reach the auxiliary-track switch in time to divert the train toward the northward running track of the Wabash. He was unable to reach the switch before the locomotive passed. The surviving employees who were on the locomotive said they thought that the speed of the train was somewhat reduced before the collision occurred.

When the equipment of the TRRA train was examined soon after the accident occurred it was found that the angle cock at the front end of the 13th car was closed and that a brake application had not been obtained behind the 12th car. There were numerous small newly formed slid-flat spots on all wheels of the locomotive. This condition indicated that the wheels had been sliding intermittently before the accident occurred. The brakes of the first two cars were damaged to the extent that their condition before the accident occurred could not be determined. The brakes of the 3d to the 12th cars, inclusive, were found to be applied. The brakes of the 39 cars and caboose behind the 12th car were not applied, and tests of a number of these cars disclosed that the airbrake systems were not charged.

Apparently the angle cock at the front end of the 13th car was in closed position when the locomotive was first coupled to the train at Madison Yard.

After the cars of the train were assembled, and before the locomotive arrived, an assistant yardmaster instructed an employee of the car department to couple the air hose. When the locomotive arrived, the assistant yardmaster informed the yard conductor that the air hose had been coupled and that the locomotive was to charge the airbrake system of the train while another crew placed the caboose on the rear end. The yard conductor instructed the other members of his crew as to the movements which were to be made. He then entered the yard office, which is located near the end of the track on which the train was assembled. At this time none of the members of the crew had been advised as to the number of cars in the train. One yard brakeman coupled the locomotive to the train and opened the angle cocks at the east end of the locomotive and the front end of the first car, and the other yard brakeman accompanied the caboose. After the locomotive had been coupled to the train for a period of 10 to 12 minutes, the fireman and the yard brakeman who remained with the locomotive heard the engineer make a brake-pipe reduction. About the same time, they observed the yard conductor returning from the yard office. As the conductor approached the locomotive, the engineer signaled and called to him that the airbrake system had been charged. The yard conductor returned to the yard office and informed the assistant yard master that the train was ready to proceed, providing the caboose had been coupled to the rear end. After the assistant yard master was informed by telephone that the caboose was being coupled to the rear end of the train, he informed the conductor that the train should proceed. The yard conductor then left the yard office, gave a proceed signal and then boarded the locomotive. The yard brakeman at the front of the train did not receive a signal from the yard brakeman at the rear, but he did not mention this fact to the other employees on the locomotive. He said that previously the yard brakeman at the rear occasionally informed the yard conductor by telephone when the caboose was coupled to the rear of the train and the brake pipe charged, and for this reason he did not consider the absence of a signal unusual. The yard brakeman who accompanied the caboose said that after the caboose was coupled to the train he found that there was no air pressure in the brake pipe of the rear car. He started toward the front of the train with the intention of making an inspection of the airbrake system. When he had walked a short distance he was overtaken by an employee of the car department who offered to make the inspection. The yard brakeman then returned to the caboose, and the employee of the car department proceeded toward the locomotive. When this employee was about midway of the train, it began to move. A yard engine was pushing from the rear. The employee of the car department gave stop signals, but there was no response to the signals and the train continued to move. The yard brakeman said that as the caboose passed the yard office he called to the assistant yardmaster and gave a signal indicating that the airbrake system at the rear of the train was not charged. The assistant yardmaster said that he heard the yard brakeman call, but because of the noise made by the yard engine he did not hear what was said. He did not see the signal given by the yard brakeman. He had instructed the crew of the yard engine to assist in starting the train, and when the rear of the train passed the yard office he gave a signal indicating that the engine was to continue to push until the speed had been increased. The yard engine stopped before the rear of the train reached Merchants Bridge. The air hose between the yard engine and the caboose had not been coupled, and neither the employees on the yard engine nor the employees on the locomotive of the train were aware that the airbrake system at the rear of the train was not charged.

This investigation disclosed that movements of TRRA transfer trains between yards are made without a proper test of the brakes. The operating rules of this carrier prescribe the method to be used in testing the brakes of a train, but these rules have not been enforced by the carrier nor complied with by the employees. Enginemen are instructed by general notice that after a locomotive is coupled to a train the brake pipe is to be charged to a pressure of 80 pounds, a brake-pipe reduction of 20 pounds is to be made, and the brake pipe is then to be recharged to a pressure of 80 pounds. When the gage on the locomotive indicates that the brake pipe is fully recharged, the train proceeds on receipt of a signal from the trainmen. Yard trainmen are instructed orally that they must know that the brake pipe throughout the length of their train is charged before a movement is started, but they are not required to make a car-to-car test to ascertain whether the brake of each car applies and releases properly. The caboose used by the crew of the train involved in this accident was not equipped with an operative

air-pressure gage. When using this caboose or other cabooses not equipped with operative air-pressure gages it is impossible for employees to determine the brake-pipe pressure at the rear of a train, and under these conditions employees accept the sound of the exhaust of air when an angle cock or conductor's valve at the rear of a train is opened as an indication that the airbrake system of the train is charged. As a result of the failure of the carrier to require a proper test of the brakes, none of the employees of the TRRA train involved in this accident, with the exception of one yard brakeman and an employee of the car department, knew whether the airbrake system at the rear of the train was charged. If a proper test of the brakes had been required and made, all employees concerned would have known that the airbrake system at the rear of the train was not charged, and the closed angle cock on the 13th car would have been found. Unless a proper test of the brakes is made it cannot be known that the requirements of the law are being observed or that the brakes are in such condition as to insure safe movement of the train.

The power-brake provisions of the Safety Appliance Acts require that not less than 85 percent of the cars in a train be equipped with power brakes used and operated by the engineman on the locomotive drawing such train. However, the brakes of only 24.5 percent of the cars of the TRRA train involved in this accident were under the control of the engineer of that train and this train was therefore being operated in violation of the power-brake provisions of the safety appliance law.

CAUSE

It is found that this accident was caused by a TRRA transfer train moving out of control on a descending grade, as a result of the power brakes on the rear 39 cars and the caboose being inoperative because of a closed angle cock between the 12th and the 13th cars.

Dated at Washington, D. C., this 19th day of March, 1953.

By the Commission, Commissioner Patterson.

[SEAL] GEORGE W. LAIRD,
Acting Secretary.

INTERSTATE COMMERCE COMMISSION

Report No. 3462

In the Matter of Making Accident Investigation Reports Under the Accident Reports Act of May 6, 1910

UTAH RAILWAY COMPANY

June 17, 1952

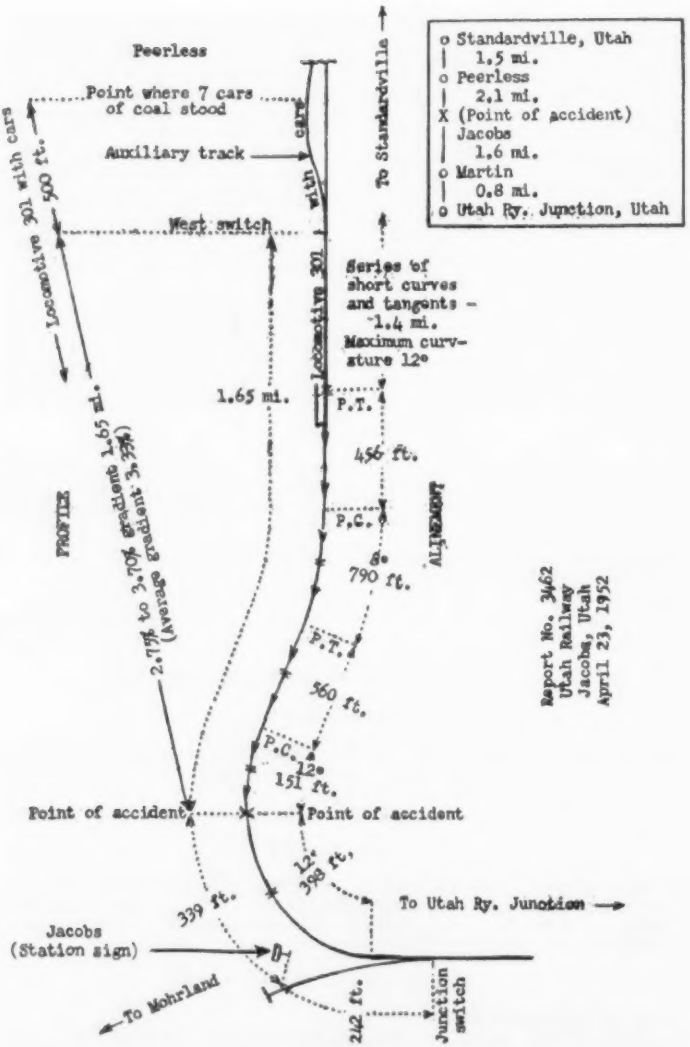
Accident at Jacobs, Utah, on April 23, 1952, caused by excessive speed of a locomotive with cars moving out of control on a curve on a heavy descending grade, as a result of the brakes on the cars being inoperative because of a closed angle cock between the locomotive and the first car.

REPORT OF THE COMMISSION [1]

PATTERSON, *Commissioner:*

On April 23, 1952, there was a derailment of a locomotive with cars on the Utah Railway at Jacobs, Utah, which resulted in the death of one employee, and the injury of one employee.

[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



LOCATION OF ACCIDENT AND METHOD OF OPERATION

This accident occurred on the Spring Canyon Branch, which extends between Standardville and Jacobs, Utah, 3.6 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. At Jacobs this line forms a junction with that part of the railroad extending between Mohrland and Utah Railway Junction. The station sign at Jacobs is located 242 feet east of the junction switch. At Peerless, 1.5 miles west of Standardville, an auxiliary track, where loaded coal cars are assembled after being weighed, parallels the main track on the north. The accident occurred on the main track at a point 339 feet east of the station sign at Jacobs. From the east there are, in succession, a series of short

curves and tangents throughout a distance of 1.4 miles, a tangent 456 feet in length, an 8° curve to the right 790 feet, a tangent 560 feet and a 12° curve to the left 151 feet to the point of accident and 398 feet westward. Throughout a distance of 1.65 miles immediately east of the point of accident the grade varies between 2.75 percent and 3.70 percent descending westward, and it averages 3.33 percent. At the point of accident the grade is 2.75 percent descending westward.

In the vicinity of the point of accident the track structure consists of 90-pound rail, 33 feet in length, laid in 1921 on an average of 18 treated ties to the rail length. It is fully tieplated, double spiked and is provided with 4-hole, 24-inch joint bars and 4 rail anchors per rail. It is ballasted with earth. At the point of accident the specified curvature is 12° the superelevation is 3½ inches and the gage is 4 feet 9 inches.

This carrier's operating rules read in part as follows:

> 113. Enginemen, firemen, conductors, and trainmen must thoroughly familiarize themselves with instructions relating to operation of airbrakes and be prepared at all times to comply with same, particularly on descending grades.

The carrier's airbrake rules read in part as follows:

> 8. Before charging the train, trainmen * * * will see that all hose are coupled, and angle cocks are open, except at rear end; that retaining valve handles are down, handbrakes released, * * * that all brakes are cut in, and inspection made for all visible defects * * *

8–C. Each train must have the airbrakes on all cars in effective operating condition, except in case of emergency * * *

9–B. * * * tests of the train brake system must be made as follows:

After the brake system on a freight train is charged to not less than 5 pounds below the standard pressure for that train, * * * a 15 pound service reduction must be made upon proper requert or signal, brake pipe leakage noted as indicated by the brake-pipe gage (which must not exceed 5 pounds per minute) after which the reduction must be increased to 20 pounds. Then an examination of the train brakes must be made to determine if brakes are applied in service application on each car. When this examination has been completed, proper release signal must be given and each brake examined to see that it releases properly.

9–C. When one or more cars are added to a train at any point subsequent to a terminal test, the cars added, when in the position where they are to be hauled in the train, must be tested as prescribed in rule 9–B * * *

56–A. Great care must be exercised by conductors in assembling of trains at mines and loading points on grades to know that full protection is given by hand brakes, or by blocking the cars, until airbrakes are tested, adjusted, charged, and made safe to handle the trains.

The maximum authorized speed for westbound trains was 12 miles per hour.

DESCRIPTION OF ACCIDENT

Extra 301 east, an eastbound freight train, was engaged in mine-run service. This train arrived at Peerless about 8:20 p. m., with diesel-electric unit 301 pushing a caboose and 11 empty cars. The caboose was detached on the main track, and the empty cars were placed on auxiliary tracks in the vicinity of a coal-mine tipple. Diesel-electric unit 301, headed east, entered an auxiliary track where it was coupled to the west end of a cut of seven loaded coal cars, which were to be added to the train for westward movement. About 20 minutes after the locomotive entered the auxiliary track, the cars were moved westward to assemble the train on the main track. Before the rear end of the cut of cars had cleared the auxiliary track the flagman discovered that there was no air pressure in the reservoirs of the sixth car, and he gave signals to stop the movement. Efforts to stop the movement of the locomotive and the cut of cars on the descending grade were not effective. The movement continued out of control, and while moving at an estimated speed of 50 miles per hour the diesel-electric unit and the cut of cars were derailed to the north in the vicinity of the station sign at Jacobs.

The diesel-electric unit stopped upright, with the rear end of the unit across the track of the Mohrland-Utah Railway Junction line and about 140 feet west of the point where it was derailed. The seven cars stopped in various positions north of the track. The first car was about 112 feet north of the track and the rear end of the seventh car was about 5 feet north of the track. The diesel-electric unit was somewhat damaged, and all of the derailed cars were badly damaged.

The front brakeman was killed, and the engineer was injured.

The weather was clear at the time of the accident, which occurred about 9:10 p. m.

Diesel-electric unit 301 is of the 0–6–6–0 road-switcher type. It is 55 feet 11¾ inches long between the pulling faces of the couplers, and weighs 325,000 pounds. This unit is provided with 24–RL and dynamic brake equipment. Main reservoir pressure of 130 pounds and brake-pipe pressure of 90 pounds are maintained. Two air compressors are provided, one of which is connected to the main engine shaft. The other is powered by a separate diesel engine and is housed in the rear compartment of the unit. It is used to supplement the air supply to the main reservoir when trains are being handled on grades. A dynamic brake interlock is provided, which prevents an automatic application of the locomotive brakes while the dynamic brake is applied. The dynamic braking action is automatically nullified by an emergency application of the airbrakes. Operation of the independent brake valve to apply or release the brakes of the locomotive is not affected by the dynamic brake interlock.

DISCUSSION

Under the rules of this carrier employees are required to familiarize themselves with instructions relating to the operation of airbrakes. Airbrake tests must be made in the prescribed manner, and airbrakes on all cars of a train must be in effective operating condition. Conductors must exercise care in assembling trains at mines and loading points on grades to know that full protection is given until airbrakes are tested and charged and made safe to handle the train.

Extra 301 east arrived at Peerless about 8:20 p. m. The caboose was detached and left on the main track and the cars in the train were placed on two auxiliary tracks in the vicinity of a coal-mine tipple. After switching operations at the mine tipple were completed, diesel-electric unit 301 entered the auxiliary track, where loaded cars which were to be added to the train for westbound movement had been assembled. The locomotive was coupled to the west end of a cut of seven cars loaded with coal. All of these cars were equipped with AB brakes. The fireman, a qualified engineer, was operating the locomotive, and the engineer was occupying the fireman's usual position in the control compartment. Because of track curvature, signals given by the members of the train crew were visible only from the left side of the control compartment of the locomotive. The fireman said that after the locomotive was coupled to the cut of cars the front brakeman coupled the air hose between the locomotive and the first car and apparently opened the angle cock at the front end of the locomotive, as the brakes of the locomotive were applied in emergency. The fireman said that he then moved the brake valve to lap position and held it in that position for a period of about 30 seconds, and then moved it to running position after being informed by the engineer that a signal had been received to charge the brake system. The conductor said that he checked the numbers of the four westerly cars on the auxiliary track and observed that the front brakeman and the flagman were releasing handbrakes and moving the retaining valves of the cars to holding position. He said that when he was in the vicinity of the fourth car of the cut he heard the sound of air moving through the airbrake system. He obtained the numbers of the other three cars from the flagman and returned to the caboose. The flagman said that he closed the angle cock at the rear end of the cut of cars, proceeded toward the locomotive, coupled the air hose between the sixth and seventh cars and the fifth and sixth cars, and moved the handles of the retaining valves of the cars to heavy-holding position. Although the fireman said that the brake valve was in lap position, the flagman said that when he coupled the hose between the fifth and sixth cars he heard the sound of air moving through the connections. The flagman said that he met the front brakeman at the fifth car, and the front brakeman informed him that the front end of the cut of cars was all right. Then the front brakeman gave a signal to the engineer to start charging the brake system of the cars. The fireman said that about 20 minutes after the locomotive had been coupled to the cut of cars, he observed that the airbrake gage indicated 90 pounds brake-pipe pressure, and he considered sufficient time had elapsed for the reservoirs of the cars to become fully charged. He made a service brake-pipe reduction of about 10 pounds and sounded a short blast on the locomotive horn to indicate to the members of the train crew that the airbrakes were applied. The enginemen said they thought the exhaust from the brake valve was normal. About 30 seconds

later the engineer informed the fireman that the signal to release brakes had been given, the brakes were released, and the westward movement to assemble the train on the main track was started. When the movement had proceeded westward about 400 feet and the locomotive was in the vicinity of the main-track switch, the engineer observed a member of the train crew giving stop signals from the vicinity of the clearance point of the auxiliary track, and warned the fireman. The front brakeman had alighted from the locomotive at the main-track switch and when he observed that stop signals were being given he boarded the cars to apply handbrakes. The flagman said that he did not make an inspection of the airbrakes after the signal was sounded on the horn of the locomotive to indicate that the brakes had been applied. After the movement had started, he pulled the release rod on the sixth car and discovered that there was no air in its reservoir. He said that he moved away from the side of the cars to give stop signals and then attempted to board the rear car to apply handbrakes but he was unable to overtake the movement. The fireman said that when the movement was approaching the west end of the auxiliary track he made a service application of the airbrakes and intended to apply the dynamic brake. However, when the speed of the movement was not reduced he moved the brake valve to emergency position and sounded the signal on the locomotive horn to apply handbrakes. The grade on the main track in the vicinity of the switch of the auxiliary track is 3.63 percent descending westward. When the speed of the movement continued to increase after the emergency application of the brakes had been made, the enginemen realized that it was out of control. The engineer left the control compartment and attempted to apply the handbrake of the first car. Because of the speed, he was unable to apply the handbrake and returned to the front end of the locomotive before the derailment occurred. The fireman said that after the brakes were applied in emergency he reduced the brake-cylinder pressure to about 50 pounds to prevent sliding of the locomotive wheels. When he last observed the speed indicator, a few seconds before the accident occurred, it indicated a speed of slightly less than 50 miles per hour. The fireman remained in the control compartment until the locomotive stopped.

Examination of the locomotive after the accident occurred disclosed that the throttle was closed and the reverse lever was in position for backward movement. The automatic brake valve was in emergency position and the independent brake valve was in application position. The rotair valve was in position for passenger service. The angle cock at each end of the locomotive was closed.

The derailed cars were damaged to the extent that an airbrake test could not be made. The angle cocks at the rear end of the seventh car and at the rear end of the sixth car were found in closed position. Several retaining valves were found in heavy-holding position, but the retaining valve of the first car was found in release position. The wheels and the brake shoes of the sixth car bore indications of excessive heating as a result of heavy braking. Apparently the hand brake of this car was applied by the front brakeman.

It is apparent that, after the locomotive was coupled to the cars which were to be added to the train, the angle cock at the east end of the engine was opened by the front brakeman, and this action caused an automatic application of the brakes on the locomotive. The air hose on the cut of seven cars had not been coupled at that time, and it is possible that the front brakeman closed the angle cock on the east end of the locomotive as a result of his hearing air escape at the rear end of the first car, and that it was not reopened before the movement started. The four surviving members of the crew said that they did not operate the angle cock on the engine adjacent to the first car. Although the fireman initiated a service application of the brakes and sounded a signal on the horn of the locomotive to indicate that brakes were applied, no inspection was made to determine that the brakes were functioning properly. It could not be determined who gave the signal to release the brakes. As a result of the failure to make the airbrake test in the proper manner, none of the members of the crew was aware that the reservoirs of the cars had not been charged and that the airbrakes were inoperative until the locomotive and cut of cars were on the descending grade and the movement was out of control.

The investigation disclosed that a number of the rules of the carrier which are essential to the safe operation of trains on grades were not complied with in preparing the train for movement from Peerless. In addition, the prescribed test was not made of the brakes of extra 301 east before it left its initial station. This noncompliance with the requirements of the carrier's rules indicates a laxness in proper enforcement.

CAUSE

It is found that this accident was caused by excessive speed of a locomotive with cars moving out of control on a curve on a heavy descending grade, as a result of the brakes on the cars being inoperative because of a closed angle cock between the locomotive and the first car.

RECOMMENDATION

It is recommended that the Utah Railway Co. promptly take necessary steps to obtain compliance with existing rules governing the operation of trains on grades.

Dated at Washington, D. C., this 17th day of June 1952.

By the Commission, Commissioner Patterson.

[SEAL] W. P. BARTEL, *Secretary.*

INTERSTATE COMMERCE COMMISSION

Report No. 3456

In the Matter of Making Accident Investigation Reports Under the Accident Reports Act of May 6, 1910

Duluth, South Shore & Atlantic Railroad Company

May 12, 1952

Accident at L'Anse, Mich., on December 14, 1951, caused by excessive speed of a train on a curve out of control on a grade, due to lack of coordinated action of the crew as required by the rules of the carrier governing the operation of trains on grades.

REPORT OF THE COMMISSION[1]

PATTERSON, *Commissioner:*

On December 14, 1951, there was a derailment of a freight train on the Duluth, South Shore & Atlantic Railroad at L'Anse, Mich., which resulted in the death of two employees, and the injury of two employees.

LOCATION OF ACCIDENT AND METHOD OF OPERATION

This accident occurred on that part of the railroad extending between Calumet and Nestoria, Mich., 62.2 miles, a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. The accident occurred on the main track at a point 45.54 miles east of Calumet and 1,784 feet east of the station at L'Anse. From the east there are, in succession, a series of curves and tangents throughout a distance of 4.82 miles, a tangent 2.13 miles in length, and a 7° curve to the left 175 feet to the point of accident and 512 feet westward. Throughout a distance of 6.98 miles immediately east of the point of accident the grade varies between 0.19 percent and 3.40 percent descending westward, and it averages 2.48 percent. At the point of accident the grade is 2.80 percent descending westward.

In the vicinity of the point of accident the track structure consists of 80-pound rail, 33 feet in length, laid in 1911 on an average of 18 treated hardwood ties to the rail length. It is fully tieplated, double-spiked on curves, and is provided with 4-hole 24-inch joint bars, and 7 rail anchors per rail. It is ballasted with sand to a depth of 12 inches below the bottoms of the ties. At the point of accident the curvature is 7° and the superelevation is 3½ inches.

This carrier's operating rules read in part as follows:

14. ENGINE WHISTLE SIGNALS.

* * *

The signals prescribed are illustrated by "o" for short sounds; "—" for longer sounds. * * *

Sound	*Indication*
* * *	
(b) — —	Release brakes. Proceed.
* * *	
(z) o — o	Transfer of air brake control.

84. A train must not start until the proper signal is given.

807. * * *

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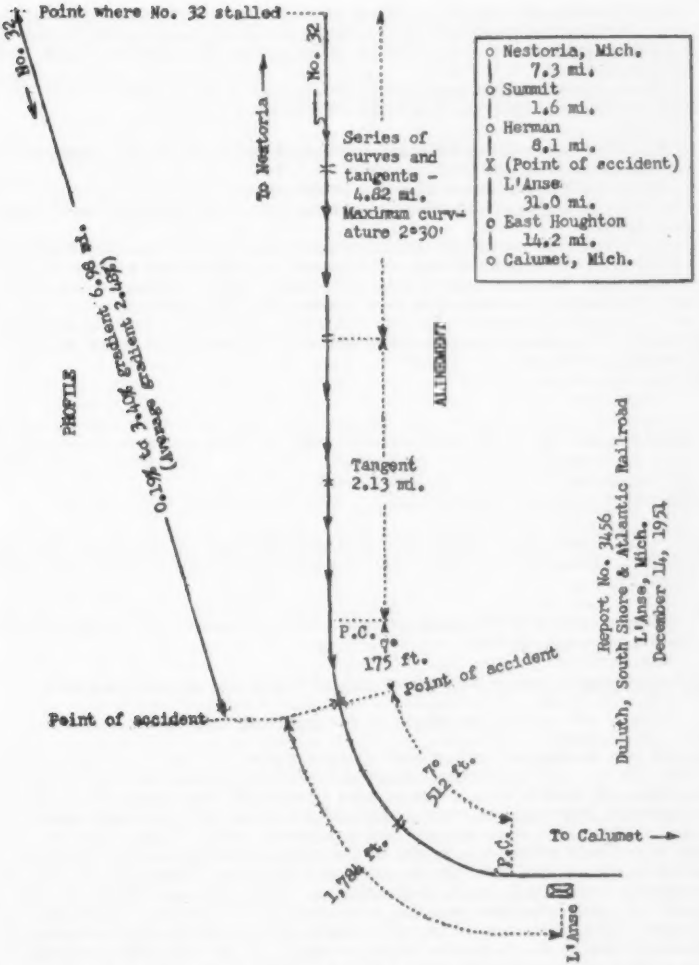
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Before engines are detached from a train on a grade, * * * a sufficient number of handbrakes must be applied on the low end of train to hold train; the airbrakes must be released and the slack closed in against cars on which the handbrakes are applied.

When engine is recoupled to train, handbrakes must not be released until airbrake system is fully recharged.

* * *

Airbrake rules read in part as follows:

2. A terminal test of airbrakes on all trains * * * must be made by car inspectors or trainmen before leaving terminal. * * *

8. After brake system on a freight train is charged to not less than 5 pounds below the standard pressure for that train, * * * a 15-pound service reduction must be made upon request or proper signal, brake pipe leakage noted (which must not exceed 7 pounds per minute) as indicated by the brake pipe gage, after which the reduction must be increased to 20 pounds. If a road test, then an examination of the train brakes must be made to deter-

mine if brakes are applied in service application on each car. If a terminal test, the examination should determine piston travel to be correct (nominally 8 inches, and not less than 7 inches or more than 9 inches) and that brake rigging does not bind or foul.

When either test has been completed, proper release signal must be given and each brake examined to see that it releases properly.

* * *

12. When more than one engine is used on or in a train, the airbrakes will be controlled from the leading engine. * * *

Under no circumstances shall the brake valve on any other engine in the train be cut in, either standing or running, except to apply brakes in case of emergency.

23. Whenever the engine handling the train is to be detached from train on a grade, the airbrakes must be released, and a sufficient number of handbrakes must be set to insure holding the train before engine or cars are cut off. Following the recoupling of engine, the handbrakes must not be released until it is known that the airbrake system has been fully recharged.

Instructions for operating and maintaining airbrake and air signal apparatus read in part as follows:

Holding on grades:

* * *

How long applied automatic brakes will hold cannot be known. They must not be depended upon, even in part, to hold a standing car, cars or train for even a short time on a grade. Instead, such must be held alone by handbrake or by the independent engine brakes * * * and not with the latter unless the train brakes are kept charged and ready for use. * * *

* * *

* * * Where there is a helper or a pusher engine in the train, the independent brakes on such must also be used to aid in holding the train while standing.

* * *

Always keep the independent brakes fully applied * * * when holding a train on a grade, * * *.

* * *

The maximum authorized speed for freight trains was 40 miles per hour.

DESCRIPTION OF ACCIDENT

No. 32, an eastbound second-class freight train consisting of diesel-electric unit 204, 23 cars and a caboose, departed from East Houghton, 14.2 miles east of Calumet, at 6:30 p. m., 3 hours late. Switching was performed and cars were added to the train at several stations en route, and the train arrived at L'Anse at 8:25 p. m., with 29 cars and a caboose. Several cars were set off at L'Anse in order to reduce the weight of the train, helper engine 717 was coupled behind the caboose, and the train departed at 9:35 p. m., 2 hours 45 minutes late. The train consisted of 14 loads, 8 empties and a caboose, and the gross weight, exclusive of the locomotives and the caboose, was 1,211 tons. At a point 7.32 miles east of the station at L'Anse the driving wheels of the diesel-electric unit slipped sufficiently to cause the train to stall. After the train stopped, the engineer of the diesel-electric unit made a service brake-pipe reduction of 20 pounds. The diesel-electric unit then was detached from the train and moved forward about 1,650 feet for the purpose of sanding the rails throughout this distance. When the diesel-electric unit was recoupled to the train the engineer released the brakes preparatory to starting the train forward. After the brakes were released and before the train could be started forward, it started to move backward on the descending grade. Efforts to stop the train were not effective, and while moving at a speed variously estimated by members of the crew to have been 30 and 70 miles per hour the entire train was derailed at a point 1,784 feet east of the station at L'Anse.

Engine 717 overturned to the north and stopped on its top and about 300 feet west of the point at which it overturned and 28 feet north of the track. The tender remained coupled to the engine. The derailed cars stopped in various positions on or north of the track. The most westerly car stopped 140 feet west of the tender of engine 717. Diesel-electric unit 204 stopped upright and in line with the track. The diesel-electric unit and the first car were slightly damaged, the 7th and the 16th cars and the caboose were demolished, and the other cars and engine 717 and its tender were badly damaged.

The flagman of No. 32 and the fireman of the helper engine were killed. The engineer and the flagman of the helper engine were injured.

The weather was clear and the temperature was about zero at the time of the accident, which occurred about 10:48 p. m.

Engine 717 is of the 2–8–0 type. It is equipped with 6–ET brake-equipment. The weight on the driving wheels is 203,580 pounds, and the total weight of the engine in working order is 230,140 pounds. The specified diameters of the engine-truck wheels and the driving wheels are, respectively, 33 inches and 55 inches. The driving wheelbase is 16 feet long, the total wheelbase is 24 feet 6 inches long, and the total length of the engine and tender, coupled, is 70 feet 5¼ inches. The tender is rectangular in shape and is equipped with two 4-wheel trucks. Its capacity is 9,000 gallons of water and 14 tons of coal. The total weight when fully loaded is 175,660 pounds. The wheelbase is 20 feet 4 inches long, and the overall length is 29 feet 9¾ inches long. The last class repairs of engine 717 were completed August 10, 1950. The accumulated mileage since class repairs was 37,057. The last trip inspection and repairs were made at L'Anse on the day of the accident.

Diesel-electric unit 204 is of the 0–6–6–0 road-switcher type. It is 58 feet in length. The weight in working order is 326,200 pounds. It is powered by a 1,600-horsepower diesel engine, and all wheels of each truck are driving wheels. The specified diameter of the wheels is 42 inches. It is provided with 5–SL brake equipment.

Neither locomotive was provided with a speed indicating or speed recording device.

DISCUSSION

No. 32, consisting of diesel-electric unit 204, 29 cars and a caboose, arrived at L'Anse at 8:25 p. m. In order to reduce tonnage, the 17th, 18th, and 19th cars, the 14th car, and the 6th, 7th, and 8th cars were detached from the train, in that order. Members of the crew said that the train brakes were used during these operations and that they functioned properly. They also said that after the train was reassembled all angle cocks were in proper position and the brake-pipe pressure gage in the caboose indicated about 70 pounds. After helper engine 717 was coupled to the rear end of the train the air hose between the caboose and the helper engine were coupled, the angle cocks were opened, and the double-heading cock under the automatic brake valve of engine 717 was closed. The front brakeman said that he inspected the south side of the train while the brakes were applied and before the helper engine was attached to the rear of the train and that he did not observe any inoperative brakes. The engineer of the helper engine said that after that engine was coupled to the rear of the train its brakes were released from the diesel-electric unit.

No. 32 departed from L'Anse at 9:35 p. m., with 14 loads, 8 empties, and a caboose. The engineer and the fireman were in the control compartment of the Diesel-electric unit, the conductor, the front brakeman, the swing brakeman and the flagman of No. 32 and the flagman of helper engine 717 were in the caboose. The engineer and the fireman of helper engine 717 were in the cab of the engine.

About 6 miles east of L'Anse while the train was moving very slowly, it was observed that the brakes of the caboose and the rear car were sticking. They were released by manipulation of the release valves. About 1 mile farther eastward the speed of the train was reduced when the driving wheels of the diesel-electric unit began to slip. There was a light covering of snow on the rails at several places on the ascending grade. The wheels continued to slip intermittently until the train stalled at a point 7.32 miles east of L'Anse. The grade was 3.1 percent ascending where the front of the train stopped and 3.3 percent ascending where the rear of the train stopped. The train stopped on a 2-degree curve to the left. The engineer said that after the train stopped he made a 20-pound brake-pipe reduction and then instructed the fireman to detach the diesel-electric unit from the train. The fireman said that he closed the angle cocks on the rear of the diesel-electric unit and the front of the first car before the air hose were uncoupled and that there was no backward movement of the train when the engine was detached. The engineer then, without giving any signals to the rear, moved the diesel-electric unit eastward about 1,650 feet to clear and sand the rails to a point where the track was tangent and the grade more favorable. Soon after the train stalled, the fireman of the helper engine observed that the diesel-electric unit was detached from the train and moving eastward. The engineer of the helper engine said that the automatic brakes were applied after the train stopped and that he then applied the independent brake, moved the reverse lever to full

forward position and fully opened the throttle. The conductor said that immediately after the train stopped he started toward the front of the train to determine why the train had stopped. The swing brakeman and the front brakeman said that they left the caboose soon after the conductor and started toward the front of the train. The flagman of No. 32 and the flagman of the helper engine remained on or near the caboose. The conductor and the two brakemen were on the north side of the train as they walked eastward and they were not aware that the diesel-electric unit had been detached from the train and had moved forward until they approached the front of the train. The two brakemen said that as they proceeded toward the front end they inspected the train and observed the position of retainer-valve handles and the condition of hand brakes and that no retainer-valve handles were found in retaining position and no handbrakes were found applied. They said the air brakes on the caboose were applied after the train stopped and, although they did not inspect the airbrakes on all of the cars, they did not observe any inoperative brakes.

The conductor arrived at the front of the train as the diesel-electric unit was closely approaching and, after it was coupled to the train, he coupled the air hose and opened the angle cock on the first car and the fireman opened the angle cock on the diesel-electric unit. They then entered the control compartment and the conductor was informed by the engineer that the train stalled because the driving wheels had been slipping and that the diesel-electric unit had been detached to sand the rails. The front brakeman and the swing brakeman were alongside the train, from four to eight or nine cars from the engine, when the train brakes started to release and they then proceeded to the forward end of the train and entered the control compartment of the diesel-electric unit. Both brakemen said that, although they had not received any instructions from the conductor as to what action was to be taken as a result of the train stalling, they thought it would be necessary to take a portion of the train up the hill and then come back for the remainder of the train, but that they did not turn any angle cock in the train nor drain the air from the reservoir of any of the cars.

The engineer of the diesel-electric unit said that after the diesel-electric unit was coupled to the train he applied the independent brake, placed the reverse lever in neutral position and opened the throttle to increase the speed of the air compressor. The statements relative to the period of time during which the diesel-electric unit was coupled to the train before an attempt was made to start the train were conflicting. The engineer and the fireman of the diesel-electric unit said that the brake system was being recharged during a period of from 10 to 15 minutes before the train started to move backward. The engineer and the flagman of the helper engine said that the train started to move within 2 or 3 minutes after the diesel-electric unit was coupled to the train. The front brakeman said that the train started to move soon after he entered the control compartment.

The engineer of the diesel-electric unit said that the gages in the control compartment indicated 70 pounds brake-pipe pressure and 140 pounds main reservoir pressure. He thought the brake system of the train was properly charged although he did not lap the brake valve to check brake-pipe pressure. After the front brakeman entered the control compartment, the engineer sounded the proceed signal, released the independent brake and attempted to start the train in forward motion. The train, however, started to move backward down the grade. The engineer said that he closed the throttle, placed the reverse lever in reverse position and made a 10- or 12-pound brake-pipe reduction. He said that even before the exhaust at the brake valve was completed he was aware that the brake application was not going to be effective, and he therefore moved the brake valve to emergency position. He said the exhaust at the brake valve appeared to be normal and soon after initiating the emergency application he observed that the gage indicated no pressure in the brakepipe. He said the train continued to accelerate down the grade and he told the other members of the crew who were in the control compartment that the brakes were not effective and to apply hand brakes. What this engineer did afterward is not clear because in his first statement he said that he attempted to recharge the brake system by placing the brake valve in running position and, after obtaining 70 pounds pressure in the brake pipe, as indicated by the gage in the control compartment, he again placed the brake valve in emergency position before closing the double-heading cock under his brake valve. Later he stated that after making the first emergency application he closed the double-heading cock so as to leave any further action up to the judgment of the engineer of the helper engine.

The conductor and the two brakemen said that after being informed by the engineer that the brakes were not effective they went out of the control compartment for the purpose of applying hand brakes on the cars in the train. They found that the first car in the train was a flatcar loaded with lumber and that because of the speed of the train they could not climb over the lumber. They then returned to the control compartment and remained there until the diesel-electric unit came to a stop after the accident.

The engineer of the helper engine stated that the diesel-electric unit was detached from the train for about 10 minutes. About 2 or 3 minutes after he heard it couple to the train there was a heavy run-in against his engine, and although he had the independent brake applied, the reverse lever in full forward position and the throttle open, this caused his engine to move backward down the grade. He said that he had the side windows of the cab open but did not hear any signals. However, from the manner in which the train moved against his engine he gained the impression that it was the intention of those on the head end to move down the hill to a more favorable point for starting the train, and he then closed the throttle, reversed the engine and released the independent brake. He said that he did not feel any application of the brakes of his engine during the first mile of the backward movement and that the train continued to accelerate and, after moving about one-half mile down the grade, attained a speed which made him feel that something had gone wrong at the front end. He said that when the train had moved about 1 mile down the grade his brake-pipe gage indicated about 60 pounds pressure. He then opened the double-heading cock to his brake valve, placed the brake valve in full release position and adjusted the feed-valve for 90 pounds pressure. He said that he waited until the gage indicated 90 pounds brake-pipe pressure and then placed the brake valve in emergency position but felt no effective retardation. He also said that he made two more attempts to recharge the brake system and to apply the brakes but these applications were not effective. He estimated that only 5 or 6 minutes elapsed during the backward movement of about 7 miles and that the train attained a speed of about 70 miles per hour. He said that he observed sparks coming from the wheels near the middle or the front end of the train during the runaway movement down the grade.

The flagman of the helper engine said that soon after the diesel-electric unit was coupled to the head end of the train he observed that the caboose gage indicated about 73 pounds brake-pipe pressure and he heard the release of the caboose brake. He said he immediately went out on the back platform of the caboose to listen for and to relay any signals from the front end of the train but that he did not hear any. He said the trains slowly moved the helper engine backward about the length of the engine and then the engineer apparently reversed the engine and released the independent brake as the engine and train began to accelerate. He said that after the train moved backward about 100 feet there was a severe runout of slack and the train almost stopped, then he again looked at the gage inside the caboose and observed that it indicated no brake-pipe pressure. He said the train then began to accelerate, and he started forward on the train to apply hand brakes. He turned up the handle on the retainer valve and applied the handbrake on the rear car but, although he was able to work forward to the fifth car from the rear, he was not able to apply any more handbrakes because of the excessive speed of the train. He said he saw sparks coming from the wheels along the train during the movement down the grade.

After the accident occurred the throttle of the diesel-electric unit was found in closed position, the automatic brake valve was in holding position, the independent brake valve in applied position, the double-heading cock was closed and the angle cocks at the front and rear were closed. The engineer said that after the accident occurred he opened the double-heading cock and later closed the angle cock at the rear of the diesel-electric unit because he heard air escaping through the broken air hose. All wheels and brake shoes of the diesel-electric unit bore indications of excessive heating as a result of heavy braking.

The throttle of helper engine 717 was found closed, the reverse lever was in about the middle position and the double-heading cock was open. The handles of the brake valves were loose and their positions at the time of the accident could not be determined. The brake shoes of both the engine and the tender bore indications of excessive heating and the tires on all driving wheels on the left side and on two of the driving wheels on the right side were loose as a result of overheating.

All of the cars in the train were derailed and damaged to the extent that an airbrake test could not be made. The wheels and brake shoes on about 30 of the

car trucks were examined after the accident and no indications of slid-flat spots or overheating were found.

There were no indications that helper engine 717 or its tender were derailed before they overturned. The calculated overturning speed for engine 717 on the curve where the accident occurred is 70 miles per hour.

The rules of this carrier provide that whenever the engine handling a train is to be detached from the train on a grade a sufficient number of handbrakes must be set to insure holding the train and the airbrakes must be released before engine or cars are cut off. Also, that following the recoupling of engine, the handbrakes must not be released until it is known that the airbrake system has been fully recharged. The investigation disclosed that trains frequently become stalled on the ascending grade getween L'Anse and Summit and from the statements of an officer and several employees it is apparent that it has been a common practice to detach the leading engine to sand the rails, and to hold the train with a service application of the train brakes and the independent brake of the helper engine and without applying handbrakes. The investigation disclosed that it has been the practice for the engineer of the leading engine to sound the proceed signal in such cases and to start the train even though no signal is received from the rear. In this case no signal was received from the rear of the train before an attempt was made to start the train.

The brakes of this train apparently functioned properly up to the time the train stalled, although a terminal test of the air brakes, as required by the rules of this carrier, was not made before the train left the terminal. All of the cars in this train and the caboose were equipped with AB brakes. The engineer of the diesel-electric unit said that although he did not make a leakage test it appeared that there was very little brake-pipe leakage in the train. According to statements introduced at the investigation, the brake-pipe was open throughout the train and charged to about 70 pounds pressure as the train proceeded eastward up the grade. After the train stalled near milepost 10, a 20-pound brake-pipe reduction was made. This should have resulted in approximate equalization of pressure in the brake cylinders and the auxiliary reservoirs of about 50 pounds. The emergency reservoirs would retain pressure of about 70 pounds. The diesel-electric unit was detached from the train for a period of time variously estimated to be from 3 to 10 minutes. After the engine was recoupled to the train the air hose between the engine and first car were coupled, and the angle cocks were opened. The brake pipe was recharged to about 70 pounds pressure, as indicated by the gage in the diesel-electric unit, and employees at both the head and rear ends of the train heard the brakes starting to release. As air from the emergency reservoirs of AB brake equipment is permitted to flow into the auxiliary reservoirs during release, it would appear that an equalization pressure of not less than 55 pounds should have been obtained in the reservoirs of all cars not having excessive leakage. It is probable that with this short train the brake-pipe pressure was increased at a sufficient rate to cause all AB valves to move to retarded-recharge position, and there would have been only a slight increase in reservoir pressure if the automatic brake valve of the leading engine immediately afterward was placed in application position. With brake-pipe pressure of 70 pounds and auxiliary reservoir pressure of about 55 pounds a service-rate reduction of 15 pounds or less would not cause a brake application. The engineer of the diesel-electric unit said that he placed the brake valve in emergency position immediately after making a 10 or 12-pound reduction and that the exhaust at the brake valve was normal and the brake-pipe gage indicated no pressure. While this would indicate that emergency operation was obtained, full emergency brake-cylinder pressure could not be secured under these circumstances. With auxiliary and emergency reservoir pressure of about 55 pounds, approximately 47 pounds brake-cylinder pressure, or practically a full-service application of the brakes, should have been obtained. However, because of the 3-stage buildup of brake-cylinder pressure from an emergency application, it would require from 8 to 10 seconds to obtain the maximum brake-cylinder pressure after the valves moved to emergency position. With a reservoir pressure of 55 pounds the vent valves would probably remain open for a period of from 47 to 55 seconds. It would appear that, with a train consisting of 22 cars and a caboose, about 1,210 tons excluding the caboose, unless the rate of speed already was excessive, a brake application resulting in about 45 pounds brake-cylinder pressure and being held in effect for a period of from 45 to 55 seconds should have had an effective retardation on the train. Apparently the double-heading cocks of the brake

valves of both engines were open throughout the second mile of the runaway movement down the grade and action taken to obtain brake applications at one end of the train was no doubt nullified by the action at the other end of the train. The attempts which apparently were made to recharge and apply the brakes in rapid succession were ineffective and resulted only in further depleting the effective reservoir pressure.

The investigation disclosed that a number of rules which are essential to the safe operation of trains on grades were not complied with. The prescribed terminal test of the brakes was not made at the initial terminal; a proper test of the train brake system was not made at L'Anse where the consist of the train was changed; handbrakes were not applied to hold the train on the grade when the diesel-electric unit was detached from the train; proper measures were not taken to insure that the train brake system was fully recharged before attempting to proceed after the diesel-electric unit was recoupled to the train, and the prescribed signal was not given for transfer of airbrake control from the diesel-electric unit to the helper engine at the rear of the train.

CAUSE

It is found that this accident was caused by excessive speed of a train on a curve out of control on a grade, due to lack of coordinated action of the crew as required by the rules of the carrier governing the operation of trains on grades.

RECOMMENDATION

It is recommended that the Duluth, South Shore & Atlantic Railroad Co. promptly take necessary steps to obtain compliance with existing rules governing the operation of trains on grades, since it appears that the rules are adequate but that they were neither observed by the employees nor enforced by the carrier.

Dated at Washington, D. C., this 12th day of May 1952.

By the Commission, Commissioner Patterson.

[SEAL] W. P. BARTEL, *Secretary.*

INTERSTATE COMMERCE COMMISSION

Investigation No. 3218

In the Matter of Making Accident Investigation Reports Under the Accident Reports Act of May 6, 1910.

ATLANTIC COAST LINE RAILROAD COMPANY

March 9, 1949

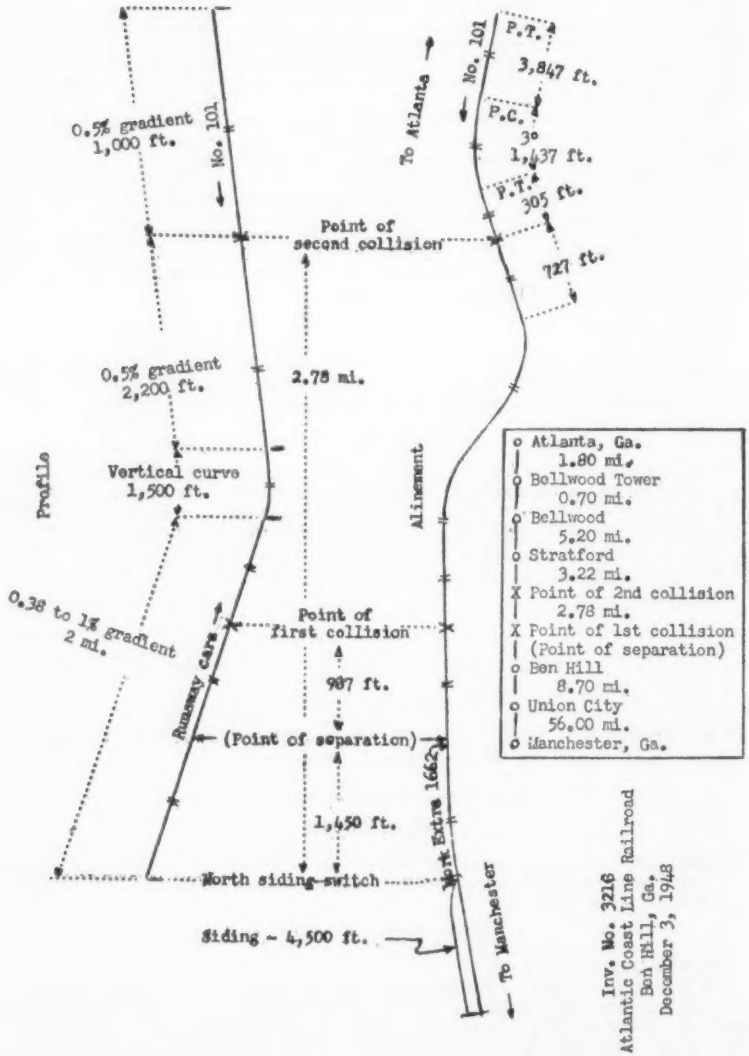
Accident near Ben Hill, Ga., on December 3, 1948, caused by an undesired separation in a maintenance-of-way service train, and by cars moving out of control on a grade.

REPORT OF THE COMMISSION [1]

PATTERSON, *Commissioner:*

On December 3, 1948, a collision occurred between two portions of a maintenance-of-way service train on the Atlantic Coast Line Railroad near Ben Hill, Ga., and a runaway car of this train was struck by a passenger train. The first collision resulted in the death of one maintenance-of-way laborer, and the injury of one maintenance-of-way laborer.

[1] Under authority of section 17 (2) of the Interstate Commerce Act the above entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



LOCATION OF ACCIDENT AND METHOD OF OPERATION

This accident occurred on that part of the western division extending between Bellwood Tower, Atlanta, and Manchester, Ga., 76.6 miles, a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. At Ben Hill, 11.9 miles south of Bellwood Tower, a siding 4,500 feet in length parallels the main track on the west. An undesired separation between the second and the third cars of the work train occurred 1,450 feet north of the north siding switch, the collision between the two portions of this train occurred 2,437 feet north of the north siding switch, and the collision between the passenger train and a runaway car occurred 2.78 miles north of the north siding

switch. Northward from the north siding switch, there are several curves, cuts, fills, and short tangents to the point where the runaway car stopped. The grade for northbound movements varies between 0.38 and 1 percent descending throughout a distance of 2 miles immediately north of the north siding switch, then there are, in succession, a vertical curve 1,500 feet long, and a 0.5 percent ascending grade 2,200 feet to the point of the second collision and about 1,000 feet northward. The separation occurred at a point where the gradient was 1 percent descending. From the north there are, in succession, a tangent 3,847 feet in length, a 3° curve to the left 1,437 feet, and a tangent 305 feet to the point of the second collision and 727 feet southward. The grade for southbound movements varies between 0.5 and 1 percent descending throughout a considerable distance immediately north of the point of the second collision.

This carrier's operating rules read in part as follows:

Freight conductors

887. They will see that the couplings and brakes of the cars in their trains are in good order before starting, and inspect them as often as possible.

Enginemen

979. They must obey signals promptly and if in doubt, stop the train. If, in switching, the train or yard man giving signals is lost to view, stop the train until he returns.

The maximum authorized speed for passenger trains was 50 miles per hour.

DESCRIPTION OF ACCIDENT

At Bellwood Tower the crew of engine 1662 received copies of train order No. 46, reading in part as follows:

Eng. 1662 works extra 6:30 a. m. until 6:30 p. m. between Bellwood and Union City, protecting against all regular trains * * *

Bellwood is 11.2 miles north of Ben Hill, and Union City is 8.7 miles south of Ben Hill. Work extra 1662, consisting of engine 1662 and a caboose, departed from Bellwood at 7:20 a. m. This train arrived at Ben Hill about 8:05 a. m. Later, engine 1662, headed north, was coupled to the south end of a cut of maintenance-of-way service equipment, and the consist from north to south was as follows: One spreader-ditcher car, one engine-tender used as fuel and water supply car and with the coal bunker to the north, 1 flatcar upon which was mounted a steam-powered ditcher, 2 air-operated dumpcars, 1 flatcar upon which was mounted a gasoline-powered ditcher, 1 air-operated dumpcar, engine 1662 and its tender, and a caboose. After an airbrake test of this train was completed, work extra 1662 entered the main track at the south siding switch, proceeded northward on the main track and stopped at a point 1,450 feet north of the north siding switch to perform ditching operations. A separation occurred between the second and the third most northerly cars, and the two most northerly cars moved out of control on the descending grade. During an attempt to recouple the remaining portion of the train to the runaway cars, a collision between these portions occurred 987 feet north of the point of separation. At this latter point the two most northerly cars become separated from each other and continued to move northward out of control. The second car stopped 2.18 miles north of the north siding-switch, and the first car stopped 3,211 feet farther north. Soon after the first car stopped, it was struck by No. 101.

No. 101, a southbound first-class passenger train, consisted of engine 1527, 2 express cars, 1 mail-baggage car, and 2 coaches, in the order named. The first and second cars were of steel-underframe construction, and the remainder of the cars were of all-steel construction. After the crew received copies of train order No. 46 this train departed from Bellwood, the last open office, at 8:46 a. m., 6 minutes late, passed Stratford, 6 miles north of Ben Hill, at 8:56 a. m., 2 minutes late, and while moving at an estimated speed of 25 miles per hour it struck the spreader-ditcher car.

The force of the impact moved the spreader-ditcher car southward 560 feet, and it was so badly damaged that the carrier ordered it to be destroyed. No. 101 stopped with the front end of the engine 308 feet south of the point of impact. The front end of the engine was considerably damaged. None of the wheels of the spreader-ditcher car or of No. 101 were derailed. The north coupler and related draft gear of the ditcher-flatcar were broken. As a result of the first

collision, the north truck of the tender was off center, the cistern and frame were badly damaged, and the south coupler and end sill were broken.

There was a heavy rainfall at the time of the first collision, which occurred about 8:48 a. m., and it was hazy at the time of the second collision, which occurred about 8:59 a. m.

Of the maintenance-of-way service train, from north to south, the first and the third cars and the caboose were equipped with K–1 triple valves, the fourth car with a K–2 triple valve, the fifth, sixth, and seventh cars with AB valves, and the engine and tender with No. 6–ET equipment. A brake-pipe vent valve was provided on the tender. The ditcher-tender, the second car, was equipped with a brake pipe and related connections, but no triple or control valve to apply and to release its brake was provided. The engine was equipped with an M–3 feed valve, and it was adjusted to supply 70-pound brake-pipe pressure. A duplex compressor governor was provided, and it was adjusted to supply main-reservoir pressure of 100–140 pounds. There was a main-reservoir connection from the engine to the air-operated dump cars. The first and the second cars were equipped with vertical-shaft type hand brakes.

The north end of the third car was equipped with a Sharon coupler, having a 9-inch knuckle face, and the south end of the second car was equipped with an A. A. R. type D coupler, having a 9-inch knuckle face. The north end of the second car, the coal-bunker end, was equipped with a short-shank pivoted engine-pilot coupler arranged in a coupler-pocket casting.

DISCUSSION

About 8:10 a. m., work extra 1662, with its engine headed north, a caboose coupled to the rear end of the tender and the front of the engine coupled to the most southerly of a cut of seven maintenance-of-way service cars, was standing on the siding at Ben Hill. The brake system of this train was fully charged, then a brake test was made. The conductor said that each brake of the train applied and released properly during his examination of their performance. Soon afterward, this train entered the main track and proceeded northward to a point about 1,450 feet north of the north siding-switch to perform ditching operations. No. 101, a south-bound first-class train, was due to leave Stratford, the last station north of Ben Hill where schedule time was shown, at 8:54 a. m., therefore, the flagman remained in the vicinity of the north siding-switch to protect the movement of work extra 1662 when it returned to Ben Hill to clear for No. 101.

When work extra 1662 first stopped at the point of work, the steam-powered ditcher, which was the third car from the north, was about 50 feet north of the desired location, and a back-up movement was made to spot the ditcher properly. The second stop was made at 8:41 a. m. Soon afterward, the conductor, who was on the ground at the east side of the ditcher giving hand signals, observed that a separation had occurred between the second and the third cars, and that the first 2 cars were moving slowly northward on the 1-percent descending grade. At this time the enginemen and the front brakeman were in the cab of the engine. The conductor said that he immediately closed the brake-pipe angle cock at the north end of the third car, opened the coupler-knuckle, which had remained closed and locked, gave a hand signal to the engineer to proceed northward, then ran northward about 150 feet and boarded the second car and immediately proceeded to the north end of the first car. At this time one laborer was on the first car, and another laborer was on the second car. The conductor said that when he boarded the runaway cut of cars the speed was about 5 miles per hour, and that it was increasing as the cars moved northward. The conductor, assisted by the laborer on the first car, applied the hand brake on that car, but the speed continued to increase. Then the conductor proceeded to the second car and attempted to apply the hand brake on that unit. This application was made by full exertion of the conductor and the laborer on the second car and with the aid of a pick-handle inserted through the spokes of the brake wheel. Before any retardation became apparent the rear portion of the train, which was being pushed by the engine, collided with the south end of the second car at a point 987 feet north of the point of separation. At this time the speed of the runaway cars was about 7 miles per hour, and the speed of the other portion of the train was about 15 miles per hour. When this collision occurred, the laborer on the first car was thrown to the ground, and was fatally injured, and the laborer on the second car was injured. As a result of the impact, a separation occurred between the first and the second cars, and these two units continued northward on the descending grade as separate movements. The automatic couplers at the south end of the second car and

at the north end of the third car did not couple as a result of the impact, although the knuckle was open at the front end of the third car. The conductor said that he again attempted to stop the second car by use of the handbrake. However, when it became apparent that the handbrake system was ineffective he alighted from the car.

The engineer of work extra 1662 said that when the second stop was made to spot the ditcher, he made a 7-pound brake-pipe reduction, and then another 7-pound reduction to insure the proper release of the brakes, and that there was no excessive closure of slack during this stop. Soon afterward the brakes became applied in emergency as a result of the separation of the train, and about 1½ minutes elapsed after the conductor closed the angle cock at the north end of the third car before the brakes released. In response to the proceed hand signal given by the conductor before he boarded the runaway cars, the engineer operated the remainder of the train in pursuit of the two cars in an endeavor to couple to them and stop their movement. After this movement was started the conductor was lost to the engineer's view. However, the engineer continued to operate his train northward in response to hand signals given by maintenance-of-way employees, although the rules require movement to be stopped when signals by an authorized person cannot be seen. The engineer said that he thought these signals were being relayed from the conductor, but the conductor said that after he had proceeded to the first car he gave no further signals to proceed. After the separation occurred the front brakeman attempted to proceed over the moving equipment toward the north end but was able only to reach the first car ahead of the engine by the time the first collision occurred. The engineer said that just before the first collision occurred, the fireman called a warning, and the engineer moved the brake valve to emergency position. However, the collision occurred before the brakes became effective. Immediately afterward, engine 1662 was detached and moved southward to Ben Hill, at which point the front brakeman communicated by commercial telephone with employees of a coal company at Stratford in an attempt to warn the crew of No. 101 concerning the runaway cars. At this time it was about 8:56 a. m. No. 101 passed Stratford at 8:56 a. m., 2 minutes late. Both Stratford and Ben Hill are closed stations.

The first car stopped 0.6 mile north of the second car. About 1 minute after the first car stopped, it was struck by No. 101. As No. 101 was approaching the point where the collision occurred, it was moving on a curve to the left. The speed was about 35 miles per hour, and the enginemen were maintaining a look out ahead. Because of track curvature and the wall of a cut on the inside of the curve, the view of the track ahead was restricted to a distance of about 900 feet. The fireman said that he first saw the car about 300 feet distant and called a warning to the engineer, who immediately placed the brake valve in emergency position, opened the sander valve, then closed the throttle. The speed was about 25 miles per hour at the time the car was struck. The brakes of this train had been tested and had functioned properly en route. No member of the train crew was aware of anything being wrong until the brakes became applied in emergency.

The crew of No. 101 held copies of train order No. 46, which required work extra 1662 to protect against all regular trains in the territory involved, if it did not clear the schedule times of regular trains at the last station in the rear. The crew of work extra 1662 intended to return to Ben Hill in order to clear the time of No. 101 at Stratford. The crew of No. 101 held no order restricting the movement of their train, except a slow order which restricted the speed to 35 miles per hour on the curve where the collision occurred.

Immediately after the two cars became separated from the work train, the conductor observed that the coupler-knuckles at the point of separation were closed and locked. Examination after the accidents disclosed that as a result of the first collision the north truck of the second car, the tender, had been displaced and was moved backward toward the center of the car. The cistern had been moved forward on the underframe, and the rear sheet was pushed inward. The south end-sill was broken, the guard arm of the coupler was broken, and the carry-iron was badly damaged. Because of damage the exact height of the center of the coupler at the south end of the second car above the tops of the rails could not be measured, but was approximated as having been 33½ inches. The maximum wear of the knuckle-pin hole was one thirty-second inch, the knuckle-pin was worn one thirty-second inch, the knuckle lock was worn one thirty-second inch, the coupler-knuckle face was worn one-eighth inch, and the total slack between the knuckle-pin and the coupler-head was five thirty-seconds inch. The coupler at the "A", or north, end of the third car was gaged and the measurements indicated that the center of the coupler was 33½ inches above the tops of the rails.

The wear of the knuckle-pin and knuckle-pin hole was one thirty-second inch each, the knuckle lock was worn one thirty-second inch, the face of the coupler-knuckle was worn one-eighth inch and the slack between the knuckle-pin and the coupler-head was five thirty-seconds inch. Both of these couplers had 9-inch knuckle faces. After the truck of the second car was replaced and the brake mechanism was repaired, the handbrake functioned properly.

At the time the separation between the second and the third cars occurred, a heavy rain was falling. The ditcher, which was located about midway the third car, had been reversed with the boom pointing to the south and raised at an angle of about 45 degrees. The tender cistern was about half full of water. Apparently, when the train was moved southward, the slack was stretched, then, when the train was stopped to spot the ditcher, vertical movement caused by slack closure, the raised position of the ditcher boom and movement of water in the tender cistern resulted in the north end of the third car rising and the south end of the second car becoming depressed to the extent that the coupler-knuckle at the north end of the third car and the coupler-knuckle at the south end of the second car passed each other vertically, and a separation of the train occurred.

Examination after the accidents disclosed that the spreader-ditcher car, which was struck by No. 101, was badly damaged. The truck dead-lever at the "A" end of the brake mechanism on this car was broken across at the lower edge of the brake-beam fulcrum-pin hole. At this point the lever was 1 inch thick and 3½ inches wide. This break was about 30-percent old fracture, and the remainder of the break was new. In addition, a former fulcrum-pin hole had been plugged by a metal plug 1⅛ inches in diameter, and the dead lever had been bored for a new fulcrum-pin hole immediately below the former one. The break extended from one of the outside edges to the lower edge of the new hole and thence from the lower edge of the old hole to the other outside edge. After the accident, an airbrake test made with a single-car device of the spreader-ditcher car disclosed 2½ pounds leakage per minute, and the brake became applied in emergency following a 7-pound service brake-pipe reduction. The automatic brake system is so arranged that a separation of cars resulting in the parting of brake-pipe hose, as in this case, causes an automatic application of the brakes at emergency rate of propagation, and the airbrakes should hold cars stationary for a considerable period. However, the first and the second cars started to move out of control on the grade immediately after the separation occurred. It is apparent that the dead-lever at the "A" end of the first car broke when the emergency application of the airbrakes occurred, and this defective condition nullified the effectiveness of both the handbrake and airbrake systems on this car. The second car was not equipped with airbrake mechanism. Apparently the handbrake of the second car was made ineffective in the first collision when the ditcher on the third car moved northward on its track on the deck of the car and struck the rear sheet of the tender on the second car and moved the front truck of the second car from its proper position, and thereby nullified the effectiveness of the handbrake on the second car.

The equipment of the maintenance-of-way service train had been inspected and repaired at Bellwood yard during the night of November 30, 1948, 3 days prior to the accident. The airbrake equipment of the spreader-ditcher car was last cleaned and oiled 16 months and 5 days before the date of the accident, but was not cleaned and oiled during the repairs at Bellwood yard on November 30.

CAUSE

It is found that this accident was caused by an undesired separation in a maintenance-of-way service train, and by cars moving out of control on a grade.

Dated at Washington, D. C., this 9th day of March 1949.

By the Commission, Commissioner Patterson.

[SEAL] W. P. BARTEL, *Secretary.*

INTERSTATE COMMERCE COMMISSION

Investigation No. 3132

In the Matter of Making Accident Investigation Reports Under the Accident Reports Act of May 6, 1910

THE PENNSYLVANIA RAILROAD COMPANY

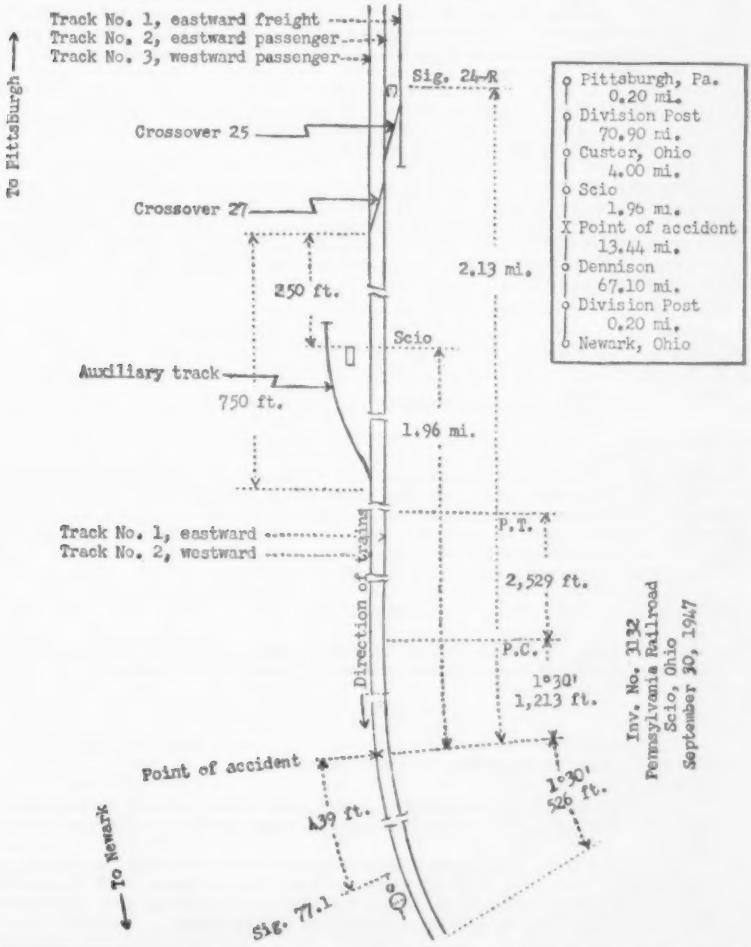
October 31, 1947

Accident near Scio, Ohio, on September 30, 1947, caused by failure to operate the following train in accordance with signal indication.

REPORT OF THE COMMISSION [1]

PATTERSON, *Commissioner:*

On September 30, 1947, there was a rear-end collision between a passenger train and a freight train on the Pennsylvania Railroad near Scio, Ohio, which



[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding wa referred by the Commission to Commissioner Patterson for consideration and disposition.

resulted in the injury of four passengers, four railway-mail clerks, five dining-car employees and two train-service employees. This accident was investigated in conjunction with a representative of the Public Utilities Commission of Ohio.

LOCATION OF ACCIDENT AND METHOD OF OPERATION

This accident occurred on that part of the Panhandle division extending between division post, Pittsburgh, Pa., and division post, Newark, Ohio, 157.4 miles, a double-track line in the vicinity of the point of accident, over which trains moving with the current of traffic are operated by automatic block-signal and cab-signal indications. The main tracks from south to north are designated as No. 1, eastward, and No. 2, westward. Within interlocking limits at Scio, 75.1 miles west of Pittsburgh, a 3-track line converges with the double-track line at a point 250 feet east of the station. From this point eastward the tracks are designated as No. 1, eastward freight; No. 2, eastward passenger; and No. 3, westward passenger. Westbound movements from track No. 1 to track No. 3 and thence to track No. 2 are made through crossovers 25 and 27. The switches of the crossovers are controlled from the interlocking machine at Custer, 4 miles east of Scio. In the vicinity of the station at Scio an auxiliary track parallels track No. 2 on the north. The west switch of the auxiliary track is trailing-point for westbound movements on track No. 2. This switch is located 750 feet west of the west switch of crossover 27, and is hand operated. The accident occurred on track No. 2 at a point 1.96 miles west of the station at Scio. From the east on track No. 2 there are, in succession, a tangent 2,529 feet in length, and a 1°30′ curve to the left 1,213 feet to the point of accident and 526 feet westward. The grade is 0.08 percent ascending westward.

Semiautomatic signal 24–R, governing the movement of the freight train involved, and automatic signal 77.1, governing westbound movements on track No. 2, are, respectively, 2.13 miles east and 439 feet west of the point of accident. Signal 24–R is controlled from the interlocking machine at Custer. These signals are of the position-light type. The cab signals are of the four-indication position-light type. The involved aspects and corresponding indications and names of these signals are as follows:

Signal	Aspect	Indication	Name
24–R and cab signal.	2 white lights in diagonal position to the left.	Proceed at restricted speed.	Restricting.
77.1	2 white lights in horizontal position over white marker.	Stop; then proceed at restricted speed.	Stop-and-proceed.

The controlling circuits are so arranged that when a west-bound train is occupying track No. 2 in the block extending between the west switch of crossover 27 and signal 77.1 and the switches of crossovers 25 and 27 are lined for a westbound movement to proceed from track No. 1 to track No. 2, signal 24–R and the cab signals of a following train display proceed-at-restricted-speed.

This carrier's operating rules read in part as follows:

DEFINITIONS

* * *

Cab signals: A signal located in engineman's compartment or cab indicating a condition affecting the movement of a train or engine.

* * *

SPEEDS

Medium speed: Not exceeding one-half the speed authorized for passenger trains but not exceeding 30 miles per hour.

* * *

Restricted speed: Not exceeding 15 miles per hour prepared to stop short of train, obstruction, or switch not properly lined and to look out for broken rail.

9. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes and when necessary, in addition, displaying lighted fusees.

* * *

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fusees must be thrown off at proper intervals.

* * *

NOTE.—When trains are operating under automatic block system rules, the requirements of rule 99, insofar as protecting against following trains is concerned, will have been complied with when full protection is afforded against trains moving at restricted speed.

* * *

297. Cab signals will not indicate conditions ahead when engine is:

* * *

(c) Not equipped for backward running and is running backwards.

501a. Interlocking home signals governing the use of routes leading to a block will in addition govern the use of the block in direction for which traffic has been established for a train to the next block signal.

515. The movement of trains not equipped with cab-signal apparatus, including whistle and acknowledger, in operative condition for the movement, is prohibited except as provided on the time-table or in emergency when authorized by the superintendent, and then as provided by rule 516.

516. * * *

* * *

Unless the train is authorized by cab signal clearance card (form CS) or train order to proceed at the speed of an equipped train, it will proceed on fixed-signal indications and permission of the signalman but not exceeding medium speed.

NOTE.—When cab signal clearance card (form CS) or train order is addressed to the train at the next block station in advance, train may proceed to that station in conformity with such clearance card or train order upon verbal permission of the signalman.

This carrier's Brake and Train Air Signal Instructions read in part as follows:

10–c. When one or more cars are added to a train at any point subsequent to a terminal test, the cars added, when in the position in the train where they are to be hauled, must be tested * * *

In the vicinity of the point of accident the maximum authorized speed was 60 miles per hour for the passenger train and 30 miles per hour for the freight train.

DESCRIPTION OF ACCIDENT

No. 267, a westbound first-class passenger train, consisted of engine 830, 2 baggage cars, 1 baggage-mail car, 1 passenger-baggage car, 2 coaches, 1 sleeping car, 1 dining car, and 1 baggage car, in the order named. All cars were of steel construction. This train passed Custer, the last open office, at 12:15 p. m., 54 minutes late, passed Scio and stopped on track No. 2 about 12:23 p. m., with the rear end standing 1.96 miles west of the station at Scio. About 9 minutes later the rear end of this train was struck by extra 8524 west.

Extra 8524 west, a westbound freight train, consisting of engine 8524, headed eastward, 8 cars and a caboose, in the order named, was into clear at the west end of track No. 1 at Scio when No. 267 passed that point. Immediately afterward, the route was lined for movement from track No. 1 through crossovers 25 and 27 to track No. 2, and extra 8524 west proceeded, passed signal 24–R, which displayed proceed-at-restricted-speed, and stopped in the vicinity of the auxiliary-track switch, where a flying-switch movement was made and the engine was coupled to the west end of the train. This train departed at 12:28 p. m., and was moving on track No. 2 at an estimated speed of 15 miles per hour when it collided with No. 267.

The force of the impact moved No. 267 westward about 5 feet. The coupler head at the front end of the first car of No. 267 was broken and a separation occurred between the tender and the first car. The front pair of wheels of the front truck of the first car and the front pair of wheels of the rear truck of the rear car were derailed. The rear end of the rear car was badly damaged. The center sill and the end sill were bent, the rear coupler and draft gear were torn loose, and the rear truck was forced out of place a distance of about 15 feet toward the center of the car. The rear end of the tender of extra 8524 west was badly damaged. The front end of the tender telescoped the engine cab, which was torn loose and practically demolished.

The engineer and the fireman of extra 8524 west were injured.

The weather was clear at the time of the accident, which occurred about 12:32 p. m.

Engine 8524 is provided with two 9½-inch single-stage air compressors and No. 6–ET brake equipment. The feed valve, which is of the C6 type, was adjusted to supply brake-pipe pressure of 80 pounds, and the compressor governor was adjusted to supply main-reservoir pressure of 102 pounds. Sandpipes are arranged in front of the No. 1 pair of driving wheels and to the rear of the No. 3 pair of driving wheels. The cars and the caboose of extra 8524 west were provided with AB-type brakes. The cab-signal equipment of engine 8524 is inoperative when the engine is moving backward.

DISCUSSION

No. 267, a westbound passenger train, stopped on track No. 2, because of a brake application resulting from a broken steam-supply pipe to the air compressor, about 12:23 p. m., with the rear end standing 1.96 miles west of the station at Scio and 439 feet east of signal 77.1. About 9 minutes later the rear end of this train was struck by extra 8524 west.

When No. 267 stopped, the conductor and the engineer proceeded immediately to a telephone, located south of track No. 1 and opposite the point where the fifth car of the train was standing, to inform the train dispatcher of the delay, and the flagman proceeded eastward to provide flag protection against following trains. The flagman had reached a point about 450 feet to the rear of his train when he heard the following train approaching, then he proceeded eastward about 300 feet and gave stop signals with a red flag. These signals were immediately acknowledged by two short blasts on the engine whistle of the following train. The flagman said that when the engine of extra 8524 west passed him the speed of the train was about 20 miles per hour, and the driving wheels of the engine were sliding. The flagman and the engineer of No. 267 estimated the speed of extra 8524 west as about 15 miles per hour when the collision occurred.

Extra 8524 west was engaged in performing switching service in the vicinity of the station at Scio, and, when No. 267 passed Scio, the switching had been completed and extra 8524 west was standing on track No. 1 immediately east of signal 24–R. At that time, the engine of extra 8524 west was coupled to the east end of the train, and the brake-pipe, auxiliary, and emergency reservoir pressures of the train-brake system had been released. About 12:20 p. m., when No. 267 cleared the west switch of crossover 27, the operator at Custer lined the route for movement from track No. 1 through crossovers 25 and 27 to track No. 2. Signal 24–R displayed proceed-at-restricted-speed for extra 8524 west and this train proceeded through the crossovers, and then westward on track No. 2 to the auxiliary-track switch, where a flying-switch movement was made to place the engine at the west end of the train. During this movement, the conductor communicated by telephone with the operator at Custer and was instructed to fill out a cab-signal message form, which authorized extra 8524 west to be operated westward with inoperative cab signals between Scio and Dennison, 15.4 miles westward. The fireman, who was operating the engine, said that extra 8524 west departed westward about 1½ minutes after the brake-pipe hose between the engine and the train had been coupled. When extra 8524 west departed from Scio it was moving in the block extending from the western limits of the interlocking to signal 77.1, a distance of 2.05 miles, and, because the cab signals were inoperative during the backward movement of the engine, the train was required to be operated in accordance with the proceed-at-restricted-speed indication displayed by signal 24–R. As extra 8524 west was approaching the point where the accident occurred it was moving at a speed of about 25 miles per hour, in territory where an embankment inside the curve restricted the view of the track ahead to a distance of about 1,000 feet. The fireman was on the right side of the cab and maintaining a lookout to the west, the engineer and the front brakeman were on the left side of the cab, and the conductor and the flagman were in the caboose. The fireman first saw the stop signals being given by the flagman of No. 267 when his engine was about 1,200 feet east of the location of the flagman. Then he sounded the engine whistle in acknowledgment, and made a service brake-pipe reduction. Immediately afterward he moved the brake valve to emergency position, placed the reverse lever in position for forward motion and opened the throttle in an attempt to avert the accident. However, the driving wheels slid and the retarding effect of the brakes was reduced. The fireman understood that his train was required to be operated in such manner that it could be stopped short of a preceding train, but he said he expected that No. 267 would proceed without stopping, and he operated his train accordingly,

regardless of the restrictive signal indication. The engineer was injured in the accident, and it was not possible to obtain a statement from him at the time the investigation was completed.

According to the evidence, no brake test was made after the cars of extra 8524 west were reassembled in the train in the vicinity of the auxiliary track at Scio. The fireman thought that at the time he made the service brake-pipe reduction the brakes did not appear to have sufficient holding power. The conductor said that after the accident all brake-cylinder pistons of the cars and the caboose were in application position, and the brakeshoes appeared to be tight against the wheels. Tests after the accident disclosed that the brake equipment of the engine, the cars and the caboose of extra 8524 west were in operative condition. The brake-cylinder piston travel of the cars and the caboose varied between 7¾ inches and 10 inches. However, the piston travel of 1 car only was in excess of 9 inches. Because of rust in the charging port of the AB valve on the caboose, the charging time of the auxiliary and emergency reservoirs exceeded 15 minutes. The average time required for a single unit of AB equipment to be charged is between 7 and 8 minutes. Extra 8524 west departed from Scio about 1½ minutes after the brake-pipe hose had been coupled, and the accident occurred approximately 4 minutes later. The brake-pipe feed valve on the engine was of a type having limited port capacity for charging the train-brake system, and it is probable that the brake pipe, the auxiliary reservoir and the emergency reservoirs of the equipment had not become charged to their maximum pressures at the time the brake application was made.

CAUSE

It is found that this accident was caused by failure to operate the following train in accordance with signal indication.

Dated at Washington, D. C., this 31st day of October 1947.
By the Commissioner, Commissioner Patterson.

[SEAL] W. P. BARTEL,
Secretary.

Senator BRICKER. Are there any questions? If not, thank you very much, Mr. Patterson.

Mr. PATTERSON. Mr. Chairman, while I am here, I would like to ask permission to file replies to any statements that are made by opponents of the bill, upon the condition that I will raise no new issues.

Senator BRICKER. That will be satisfactory.

The next witness will be Mr. P. M. Shoemaker, president of the Delaware, Lackawanna & Western Railroad Co. Mr. Shoemaker, you may proceed.

STATEMENT OF P. M. SHOEMAKER, PRESIDENT, THE DELAWARE, LACKAWANNA & WESTERN RAILROAD CO.

Mr. SHOEMAKER. My name is P. M. Shoemaker. I am President of the Delaware, Lackawanna, and Western Railroad Co., with headquarters at New York City. I graduated from the University of Michigan in 1928, receiving a bachelor of science degree in mechanical engineering. The following year I attended Yale University, having received a Strathcona fellowship in transportation. In June 1929, I received from Yale the degree of master of science in transportation engineering. My railroad background started during the summer vacations of 1926 and 1927, when I worked as a track laborer for the Pennsylvania Railroad. The summer of 1928, I worked as a dynamometer assistant for the Erie, testing road locomotives. Starting in July 1929, I worked for the Erie in various capacities—freight house laborer, checker, foreman, terminal yardmaster and general

yardmaster, terminating my employment with that company at the end of April 1933.

In November 1934, I became associated with the New Haven as a research assistant, becoming superintendent of freight transportation in July 1935, which position I held until my association with the Lackawanna in 1941. From June 1, 1941, until October 1, 1941, I held the position of transportation assistant to the president. From October 1, 1941, until November 1, 1943, I held the position of superintendent of the Morris and Essex division; from November 1, 1943, until April 1, 1946, general superintendent; from April 1, 1946, until January 1, 1948, general manager; from January 1, 1948, until August 1, 1952, vice president (operations), and since August 1, 1952, president of that company.

I appear here today in opposition to S. 539 on behalf of the railroad members of the Association of American Railroads.

Before discussing the provisions of S. 539, I wish to say that I wholeheartedly endorse the statement of Mr. Gurley, who has preceded me. Mr. Gurley has clearly shown why S. 539, a bill purportedly aimed at bringing about greater safety of railroad operation, would actually result in less safe and less efficient operation and, therefore, should not receive the favorable consideration of your committee.

As I understand S. 539, it is comprised of two features. One would give the Interstate Commerce Commission the same jurisdiction over telegraph, telephone, radio, inductive, or other wayside and/or train communication systems that it now has over signal systems. The other feature would give the Interstate Commerce Commission authority over the establishment, maintenance, and observance of rules and regulations for the operation of trains. I shall first comment upon that feature of the bill having to do with communication systems.

All railroads have either telegraph or telephone communication systems and virtually all employ both. Many of the roads also have radio or inductive systems of communication. With respect to telegraph and telephone, I am at a loss to understand the purpose of giving the Commission authority over such systems. The railroads have been using the telegraph as a means of communication since the middle of the last century. The telephone was used as soon as it became available. At no time has it been thought necessary for the Commission to have authority to require the installation of telephone or telegraph communication, or to require the railroads to secure Commission approval in the event of changes in such communication systems. There have not been presented here any considerations which would justify giving the Commission such authority.

Senator PASTORE. Don't you think that possibly if you had had a telephonic communication system on the train, we might have avoided this accident here in Washington?

Mr. SHOEMAKER. Senator, we get into the problematical with that. The accident in Washington related, first, to the question of design of equipment. It related to nonobservance of the difficulties with that design over a period of time. Then when the minute before the accident came along, the engineer found himself in difficulty. Other members of the crew did not react to the situation. Air was available on the rear end of the train. As a result of that accident, the Lacka-

wanna, and many other railroads, I know, put out immediate instructions to train servicemen requesting them to reexamine their own sense of responsibility for knowing when a train was going too fast, for taking action themselves to pull the emergency cord, and put on the brakes, as every trainman knows how to do and is instructed how to do under our rules.

It is not clear to me, to be very specific in answer to your question, just how telephone communication would have averted that thing. The engineer is sitting in one location, and conceivably could have had a telephone right there. The rest of the train crew is elsewhere. The conductor has the responsibility for the entire train. He is moving up and down the train, through the cars, presumably, collecting transportation, seeing that things are in proper shape. Others on the train, other trainmen that may be on there, depending on the length of the train, have similar responsibilities. Someone would have to be at the other end of a telephone someplace all of the time.

And in our whole 100 years of railroading, I don't recall of another accident having been quite that way.

Senator PASTORE. It was my impression, at the time of the hearing, that if somehow word could have gotten down the line, they could have applied the emergency brakes in time and avoided the accident. But there was no communication between the various members of the crew; those in the back were at a loss to understand what was happening in the front, and those in the front couldn't communicate with those in the back. Everyone was at sea. And just as you say, there was general confusion there and the accident just happened.

Mr. SHOEMAKER. Senator, with proper alertness, the men in the rear end of that train did not need communication. They knew where they were and they knew how fast they were going. There was not alertness on the part of the employees involved. I don't say that to throw a brickbat at an employee on another railroad.

Senator PASTORE. You have a right to state your opinion.

Mr. SHOEMAKER. But I am sure that any railroad officer would be very seriously concerned over that kind of a situation. We had just such a situation on the Lackawanna a few years ago, where a train was going too fast and the crew could have put the emergency brakes on, and failed to do so. We disciplined the conductor at that time quite seriously for it.

Senator MONRONEY. One of the facts was that the principal warning device, apparently traditionally used by the railroads, was the frequent blowing of the horn. That would have been fine and dandy before the days of air conditioning and before the heavy trains and going through yards. But that could not possibly be heard in a Pullman car today, 15 cars back of the engine and, consequently, no one knew what the warning was. The people down the track knew about it, but there was no communication developed whatsoever between the cab of the engine and any of the cars, let alone the cars back of car No. 3, where the stoppage made the brakes ineffective.

It seemed, during those hearings, that with all the new devices in communication, that it is just a little absurd to a layman that a man in charge of that train has no way of communicating whatsoever with the rest of the train after the train is in movement.

Mr. SHOEMAKER. As a former operating man, Senator, I would have more confidence in the alertness of employees on the job, their

sense of responsibility to detect speed, than I would in the uncertainties of any kind of a communication system that I know of that might take place between an engine and some other car of a passenger train.

Senator MONRONEY. There was only one man, apparently, who felt any responsibility behind the cab. That was the conductor, who apparently was thrown under a seat or something, if I remember the testimony correctly, and was quite rattled concerning the emergency cord. The other man was a baggage smasher. He was trying to get his baggage ready to get off. Another man was the assistant Pullman conductor. The man in the back of the train is not a ranking member of the railroad hierarchy when it is a matter of operating the train.

I got the distinct impression, aside from the conductor alone, who apparently was thrown off balance as the train was careening around, that there was nobody back of the cab who would have had the authority, or, at least, the intestinal fortitude, to stop one of those fast trains by pulling the emergency brake.

Mr. SHOEMAKER. There is no limitation upon authority to take the safe course under unusual railroad conditions. It is true the conductor reacted beautifully, within the limits of his ability to do so. But the keyman who did not react was the flagman of the train.

Senator MONRONEY. The flagman was in the rear coach. Apparently there is a difference in movement. I think the testimony was 35 miles an hour. Maybe 20 miles an hour was the normal speed at that point. That is depending quite a little bit on human facilities for being alert to dangers which may not be completely obvious to the average person; consequently, the wreck going into the station where, it seems to me, communications between the front and back of the train in this day and age when you can pick up a telephone and call San Francisco from any of these trains, is just not quite bringing us into the 20th century.

Mr. SHOEMAKER. As I stated, I would have some real misgivings as to dependence upon that for safety on my own railroad.

Senator MONRONEY. You wouldn't depend entirely on that alone. It would be an added safety factor. You still have the men on the train and their alertness. But, apparently, even the human factor didn't give us the safety. Nobody realized, I think, in the back of the train, that the engineer was in the bad trouble that he knew he was in.

Mr. SHOEMAKER. Of course, the initial slowing down of that train would start more than a mile away from the station. The conductor reacted to it. He knew they were not slowing down quickly enough, but obviously the man on the rear end who might have put the emergency brakes on, didn't. Of course, we had a completely unusual situation here which goes back to a question of design. As Mr. Preston testified yesterday, the action taken by the American railroads in connection with that very thing will, we think, forever avoid a repetition of that kind of circumstance.

Senator MONRONEY. Mainly through the human element. I still think there are electronic devices that certainly are available for intertrain communication, as well as intratrain communication.

Mr. SHOEMAKER. There are some that could be used. You are perfectly correct.

Senator MONRONEY. The page that you have just completed concerned telegraphic and telephonic equipment in regard to station-to-

station or post-to-post, and not from moving train to your control area; is that not true?

Mr. SHOEMAKER. No; I am going into that just a little further on on the next page. Another witness who follows me, Mr. Stine, is going into considerable detail as to radio and train communication and the distinctions between head end and rear end, a train at wayside and wayside-and-wayside communication, using some of these newer inductive devices.

Senator PASTORE. Could I get your position in a nutshell? I think you are taking the position—perhaps I am getting a little bit impatient and should wait until you finish your statement—that the American Association of Railroads have taken about all the precautions that can be taken through their conferences on safety, and that you don't think it is necessary for this to be controlled by the ICC. Do I get that as your position?

Mr. SHOEMAKER. I think this: That the Association of American Railroads, as such, merely coordinates safety work between individual railroads. It is the individual railroad managements that have a tremendous responsibility for safety. It is through the association that we get a tremendous exchange of information and coordination, and then, committees that will be set up will bring out the recommended practice, bringing out the best devices, the best practices that have been developed on individual railroads around the country. We don't say that is a perfect system, but we certainly say that the achievements in safety on American railroads under that kind of a system have been phenomenal.

Senator PASTORE. Now, bring it to your logical conclusion: It is not necessary to be further supervised by the ICC?

Mr. SHOEMAKER. I firmly believe that, sir.

The CHAIRMAN. In your judgment, wouldn't it be an increased factor of safety if, on these trains, there was a loudspeaker device so that the engineer could call, as in the case of the Washington accident, and say, "The train is out of control. Throw all brakes at once"; wouldn't that be a factor of safety and to remind these men to get on the job and wake up?

Mr. SHOEMAKER. I would have some reservations on that. I would be concerned about panic of passengers, for example.

The CHAIRMAN. He could say it in French, perhaps, some foreign language.

Mr. SHOEMAKER. Railroad language is sometimes almost a foreign language.

The CHAIRMAN. He could say, "The train is going to hell. Throw the brakes." That would have told the story, wouldn't it?

Mr. SHOEMAKER. I think you are perfectly right that some kind of a reminder might have helped the flagman to pull the cord.

The CHAIRMAN. Exactly. Wouldn't that be a help?

Mr. SHOEMAKER. It might have been in that case.

The CHAIRMAN. An increased factor of safety in that case?

Mr. SHOEMAKER. In that particular case. But bear in mind, in our whole experience, we don't know of another case of that kind having happened.

The CHAIRMAN. We do know history will repeat itself.

Mr. SHOEMAKER. We know history will not repeat itself on that particular thing, as to the correction of the defective design. That has been done.

Senator PASTORE. Isn't it true there have been the greatest amount of accidents since the railroads have been allowed to increase their speeds?

Mr. SHOEMAKER. No, sir, to the contrary. I think we have to define what you mean by "accidents." We classify passenger casualties, employee casualties, and then the classification of collisions, and so on, where there have been no injuries at all.

Senator PASTORE. I am speaking now of the general train accidents that the public is interested in, one train hitting another train, or becoming derailed or unable to stop, like the situation we had here at the Washington Terminal. That is the kind of accident I am talking about. I am not talking about occupational accidents.

Mr. SHOEMAKER. Since the end of Government operation after World War I, there has been an almost steady—an occasional year would bump it up a little bit—decline in employee injuries, in passenger injuries, and in accidents, as such, in the railroad industry.

A later witness is going to give you some statistics on that which I think you will find of considerable interest.

Senator PASTORE. One more question, and I will not interrupt you again. I think the presentation made by Mr. Patterson was that the ICC had a right to control your speed but had no right to control you in the safety devices or safety precautions that you should take in using that speed; is that correct?

Mr. SHOEMAKER. Commissioner Patterson's testimony was a little shocking to me, because it goes even beyond, far beyond, the verbiage of S. 539, in the desire, apparently, of the Commission to take over all control of a railroad operation.

He goes into speed. He goes into train length. He goes into practices regarding all of those as being possibilities of Commission control. Having had our rate structure controlled by the Commission on interstate traffic, by the State commissions on intrastate traffic, having our cost control taken away from us through commission control over operating rules, it puts management in a pretty difficult position to try and keep railroads under private enterprise. I don't think our record deserves that being done in the public interest.

Senator MONRONEY. Before we leave that point, however, I think most of the committee was rather shocked, and I imagine the public who are riding trains were rather shocked, to find that the closing of any angle cock on any train absolutely cuts off control of that train behind the stoppage. It was pretty well advertised throughout the country that that is what happened. I don't think the people understood how the airbrakes worked, or that sort of thing.

It seems to me that with the knowledge that train riders now have, that any one angle cock on a train that might be turned by some insane person, or saboteur or disgruntled passenger, or anything else, could effectively prevent the engineer from controlling that train, is not a good thing. It could, in some cases, cause a great many casualties. It would seem that some kind of a warning device, maybe working off your air, could be developed. In the case of almost every single-motored pleasure plane, there is a light to show whether

your landing wheels are down or not when you are coming into an airport. Certainly that shouldn't be restricted by the railroads.

Mr. SHOEMAKER. Senator, you will not find any proven safety device being resisted by the railroad industry; to the contrary, the record of the past 50 years will show that, while we have disagreed with the Commission sometimes on safety devices, that we wanted to be sure it was going to do the thing that it was supposed to do, we have gone far beyond Commission recommendations in putting in safety devices of our own.

Now, in this particular case, may I explain, briefly, the airbrake system? It is dependent, initially, upon power from the engine pumping up a tank of air underneath an individual car. Having secured that tank of air pressure under the car, it is air from that tank, then, that puts on the brakes. The line of air from the engine, after that power has been put under the car, then becomes merely a control valve. Breaking that line, as you point out, shutting off that line, as you point out, momentarily breaks controls.

Now, if the line is open, if a pipe breaks, anything that lets air escape from this long line, from the locomotive, puts on the airbrakes in emergency immediately. That is the great safeguard of this system we have.

Now, in the more unusual system, and it is extremely unusual, where an impairment comes in the air line, as the closing of an angle cock, the brakes will ordinarily go on then in a comparatively short time. Why? Through leakage in the air pipe and airbrake system on the train.

This accident here at Washington, people familiar with airbrakes, I think, are in general agreement that, had the train been going only a few miles farther, the airbrake would have leaked on that train and stopped it.

Coming back to the point you make, it is true the angle cock has been advertised to the American public because of this accident. The angle cock is a comparatively hard thing to use. It is in a comparatively inaccessible place to the public on a passenger car. Unless you get into almost insanity, we don't think it will be an incentive to cause trouble. Certainly, out of this great publicity that has come from this Washington accident, I know of no trouble on other railroads that has come from some outsider or some trespasser, some saboteur, if you will, attempting to close angle cocks.

It is rather a long answer to your question, but I wanted to try to to it rather completely, sir.

Senator MONRONEY. It seems to me there could be some light or something operated from your air in your tank when your control is off the engine due to some stoppage.

Mr. SHOEMAKER. The thing is extremely rare.

Senator BRICKER. Do I understand if that angle cock had been completely open the emergency would have immediately gone on in the rear of the train?

Mr. SHOEMAKER. If anything, Senator Bricker, had occurred to break that line they would have gone on. That is exactly what the emergency valve in a car does. It opens the train line for a depletion of air, permitting the brakes to go on.

With respect to radio train communication, a somewhat different question is presented. Here we are dealing with a device which,

while improved in recent years, is still in the process of early development. The legislative committee of the Interstate Commerce Commission in its report on S. 539 advised this committee that the use of radio in train communication is (and I quote) "to some extent, still in the experimental stage, * * *" As will be shown by a witness who will follow me, more than one-half of the larger railroads of the country are using radio in either line-haul or terminal operations but generally on a selected, and many times experimental basis.

I am sure the committee appreciates that wholesale adoption of new devices before their practicability and value have been fully determined would be an unsound policy. The history of railroad operation shows continuous research in and development of safety measures. For example, today in many areas of the country automatic signals are being supplemented, and sometimes supplanted, by what is known as centralized traffic control. Such control contributes to safe operation of trains and at the same time improves the efficiency of operation, particularly on single-track railroads. The railroads are installing other new signal devices and other new communication systems as experience has proven their effect on safety and efficiency of operation. There is one compelling limitation in the field of safety and in the development of greater efficiency. This is the availability of funds from adequate earnings. I suggest that the most effective measures which the Congress could provide would be those designed to afford the railroads the opportunity to realize sufficient revenues.

When it becomes established that radio, or any other similar development, will improve safety and efficiency of operation, it is necessary that such be adapted to and integrated with the different conditions existing on different railroads. It is important to bear in mind that radio, or any such development, supplements, but does not replace, time-tested measures for train protection. Determinations of whether a particular device can be adapted or modified to the operating conditions on a particular railroad, or whether that device will contribute more to safety and efficiency of operation than some other, can best be made by that railroad's operating officers who are the persons intimately familiar with the conditions, and responsible for the results, on their own line. Nevertheless, the proponents of S. 539, in seeking to give the Interstate Commerce Commission authority over communication systems, must of necessity assume that the administrative agency is better informed than railroad officers on their own property. Such an assumption is wholly unwarranted.

The CHAIRMAN. I don't quite follow your deduction there. I don't think that is 100 percent a correct deduction. The matter of sales resistance comes in there. The railroads have to put this into effect, and it is going to cost money, as you say; therefore, they have a natural bending of their backs upward in protest to the Commission in this thing.

The Commission is thinking of the public safety alone, and the railroads are thinking more of the cost. It is like an individual buying something that he thinks he can't afford.

Mr. SHOEMAKER. Mr. Chairman, I think there is an evaluation there of what is going to produce the greatest and most effective return for the money. We have had devices ordered by the Commission which have not proven to be satisfactory. The Commission is no more infallible than we are.

The CHAIRMAN. I think the Commission would be the first to admit that.

Mr. SHOEMAKER. I am sure they would be, sir. But we think with our own closeness to the details of operation, and with the difference in operation that obtains around the country, we are in a better position to evaluate it than the Commission.

Senator MONRONEY. If what you say is true, in that last paragraph, we could practically disband the Civil Aeronautics Administration, which has done a terrifically good job in improving air safety.

American Airlines and Eastern are just as able and have just as good management as the railroads, but it has been the steps taken by the CAA, in cooperation with the airline operators, that have resulted in a fantastically good safety record on air travel.

I think a train going 100 miles an hour today has the same problems of an outside board being also concerned with the safety of operation along with the management itself.

Mr. SHOEMAKER. You have taken me to airline safety. I am not qualified to talk on it. I would suggest that there may be some difference between an industry having 100 years of experience behind it, an industry that is no longer a growth industry, one which is in the technical improvement stage almost completely, as against one with a terrific growth picture and the newness of personnel that the airline industry has.

Senator MONRONEY. It would seem to me that what you say, because this does involve some governmental powers on safety, that it is absurd to think you are not as much concerned with the safety as the Commission; of course, you are.

Mr. SHOEMAKER. We are responsible for it.

Senator MONRONEY. It is more on you than the Interstate Commerce Commission. They will not ride your railroads as much. This wreck here in Washington took a great many passengers, probably, into the air off the railroads.

It seems to me that the idea it would be an unwarranted assumption of governmental authority, that they have a little more power on safety devices, is just not right. I just can't go along with that.

Mr. SHOEMAKER. You are correct. Any accident alarms people. I am sure the Washington accident alarmed people who would be train riders. I am sure the accident that was in the headlines in the paper this morning alarmed airline riders.

Both the airlines and ourselves deplore that kind of thing. But I submit to you that this record of ours, with its steady improvement in safety, does not indicate the need in public interest for more regulation in that respect. I think it indicates to the contrary. It comes down pretty close to a philosophy of government.

Senator PASTORE. May I say, Mr. Shoemaker, in general, I quite agree with you. I think it is to the best interest of the railroad to promote the highest degree of safety that it can, because if it does that it is going to increase its revenue and it is going to build up better public relations with those it deals with.

But when you say at this moment that every railroad in the United States of America has adopted the same devices of safety to the same degree, that is where the responsibility of the ICC comes in. Maybe your railroad has done the best it can and maybe your railroad hasn't had an accident because it has taken all of these precautions. But

now we have to be able to see the position of the ICC that has the responsibility with reference to the entire railroad industry and all the people of the country.

All they are saying is that we ought to have standards, and that these standards ought to be lived up to by all the railroads of the country. You may have a situation here where some of the railroads have taken every possible precaution. Then you have other railroads who, for competitive reasons, haven't done quite as much.

Don't you think it is the responsibi ity of the ICC and this Congress to the people of this country, to see that we have a high level of standards of safety for the public at large and that they are maintained uniformly?

As I understand it, they are no enforcing authority. You can take it or you can leave it. You do have a fine system through the American Railroad Association. But there is nothing obligatory and there is no enforcing power; isn't that so?

Mr. SHOEMAKER. No. I don't quite agree with you, sir.

Senator PASTORE. I would like to have that on the record.

Mr. SHOEMAKER. In the first place, there is no need for uniformity as between railroads. Would you place the New York Central and the Pennsylvania, with their tremendous passenger carryings on the same basis with regard to safety measures for passengers as the O. & W. Railroad which doesn't have any passenger service on it, I think?

We don't need uniformity but a recognition of the difference on individual railroads. It is the recognition of those conditions that gives the responsibility to managements of taking those measures that fit their particular situation.

Senator PASTORE. I mean, uniformity as to the same activity. I would expect it on all cars that are carrying passengers. I would expect uniformity on all cars that are carrying freight.

You wouldn't have the same uniformity as to all activity, but as to the same activity there is no enforcing power now to say that this is what you should have to protect the public or to protect you against accidents; isn't that a fact?

Mr. SHOEMAKER. There is uniformity on car design as far as safety equipment is concerned. The Association of American Railroads and its predecessor, the American Railroad Association, made tremendous strides in providing minimum standards of strength and of safety. Those are built into every railroad passenger car today. They are built in every railroad freight car in service today.

I do not agree with you that there can be any difference in the responsibility of individual railroads among themselves as regards safety. I know of no railroad which does not place it as of paramount importance. It is our job.

Any railroad head or any chief operating officer is responsible to the public that he carries. He is responsible to his own employees. He is responsible to his stockholders for having as safe a railroad as his ingenuity can provide.

Senator PASTORE. And when a better thing comes along to provide safety, you buy it up?

Mr. SHOEMAKER. When it is proven by test to promote safety the railroads have been anxious to adopt it.

Of importance in the safe operation of trains are not only those devices known as safety devices, but also many other features,

among them the design and condition of roadbed, track, and equipment. I might add, "adequate training and education of employees."

The men best qualified to competently judge where available funds should be applied in order to achieve the maximum safety of operation are those who have the obligation and duty to analyze and study the situation on their individual roads, namely, the railroad officers upon whom rests the 24-hour-a-day responsibility for safe, efficient, and economical operation. No administrative agency sitting in Washington, D. C., necessarily basing its determinations largely on second-hand information, can possibly comprehend or keep qualified on conditions on each and every railroad and accurately evaluate the safety needs of each.

There has been no showing for need of governmental intrusion in the field of railroad communication systems; nor has there been any showing that administrative control would contribute to safety of operation. Enactment of that feature of S. 539 which would grant to the Interstate Commerce Commission authority over "telegraph, telephone, radio, inductive, or other wayside and/or train communication systems" can serve no useful purpose.

I shall now comment upon the second feature of the bill, namely, that which would give to the Commission authority over the operating rules of the carriers.

Regulation should in no case be imposed or expanded unless it is clearly demonstrated that such a step is vital and necessary in the public interest. The Congress should scan objectively any proposal for enlargement of the scope of governmental regulation. Nothing can more certainly sap the initiative and energy of private management and operation than overregulation by Government. Particularly should the Congress beware of proposals in the guise of additional safety regulation which, in actual fact, would superimpose upon the discretion, initiative, authority, and responsibility of railroad management the will of the Interstate Commerce Commission in the matter of rules for the operation of trains. S. 539 is such a measure.

It should be understood by all members of the committee that the rules, which would, under the provisions of S. 539, be placed under the authority of the Interstate Commerce Commission, are the railroads' operating rules which govern employees and absolutely control the actual physical operation of the railroads. Granting an administrative agency authority over such rules vests that agency with domination over the physical operations of the carriers. If there is any one function connected with railroad operations which is essentially managerial in character, it is that of conducting the actual physical operation of trains.

Train operation requires immediate and constant supervision by men qualified through training and experience, men who are thoroughly familiar with every part of the physical plant on which the rules and regulations apply. Placing control of operating rules—and thus of the actual operation of trains—in the hands of a far-distant administrative agency will without doubt cause the lowering of the efficiency of railroad operation with resultant impairment in overall safety of such operations.

The granting of authority to the Interstate Commerce Commission over the operating rules of the carriers would set up a division of authority between railroad management and the administrative

agency. The inevitable result of such a division of authority is to dilute railroad managements own sense of responsibility and eventually its capability to exercise it. The safety record with respect to injuries to and deaths of employees and passengers points strikingly to the fact that railroad management is vitally aware of its responsibility to decrease accidents, injuries, and deaths. With divided responsibility, safety of operation would be impaired. A division of responsibility in relation to any matter is usually bad. A division of responsibility for railroad operation, in my opinion, would be disastrous, and the public interest clearly demands that this be prevented.

One might get the impression from reading the bill that only a few railroads have operating rules. Such is not the case. Railroads have had rules and regulations governing their operations from their earliest days, and the rules now in effect reflect the experiences of four generations of safety-conscious men and managements. The first association of railroads in this country adopted a standard code of operating rules in 1889. These rules have been revised and amended constantly, based on experience and technological improvements.

The standard code of rules is not mandatory, but recommendatory. It is, however, in general use except as modified by local conditions. It could not be mandatory because a rigid set of rules cannot be devised to fit the requirements of all railroads. Each railroad, because of its own operating conditions and physical characteristics must of necessity have its own operating rules, and it is not uncommon on some roads for different segments or divisions to have special rules to fit their peculiar operating conditions. Rules are under constant revision and must always continue to be. General and special instructions under the rules must be and are issued as necessary to supplement basic rules and/or to meet changing conditions or special situations.

No governmental agency, no matter how able or well intentioned, can sit in Washington and, by remote control, exercise jurisdiction over rules and regulations affecting the operation of more than 223,000 miles of railroad and almost 400,000 miles of track in the United States without seriously impairing the ability of the railroads to move the traffic of the country with safety, efficiency, and economy. As I have previously indicated, a regulatory body in Washington must act on second-hand information. Information of that kind cannot be a sound basis for forming judgment with respect to the exactitudes which must be the basis for operating rules and any modification thereof. In addition, it is obvious that rules resulting from the exercise of Commission authority will tend toward uniformity, thereby failing to recognize that operating conditions on individual railroads, and parts thereof, vary in substantial particulars.

There is inherent in the proposal contained in the bill for a division of authority between railroad management and the Commission an erroneous assumption, namely, that the railroads in promulgating and enforcing operating rules are not sufficiently interested in railroad safety. Nothing could be further from the truth. In each book of operating rules there is usually a page, as recommended to all railroads by the standard code and located at the beginning of the book, headed "General Notice." It is of primary importance. The first four paragraphs read:

Safety is of the first importance in the discharge of duty.
Obedience to the rules is essential to safety.
To enter or remain in the service is an assurance of willingness to obey the rules.
The service demands the faithful, intelligent, and courteous discharge of duty.

In emphasizing the importance of basic experience and practical knowledge in the formulation of operating rules, I can speak from my own background. On the New Haven I had some limited experience in revising operating rules and instructions. On the Lackawanna the rules of the operating department were revised under my jurisdiction, and a new book made effective April 27, 1952. This revision took more than 2 years, with countless meetings and extended discussion of exact wording. Work in this respect must necessarily be meticulous. The rules must be readily understandable. They must be in simplified language and in railroad terminology. They must fit the conditions upon each railroad. They must be so precise and exact that they are not susceptible to misunderstanding or misinterpretation.

The qualification of men with regard to operating rules and the policing of their observance constitute two other very pertinent aspects of this matter, both important responsibilities of railroad supervision. On the Lackawanna, upon entering train or yard service a new employee is given a book of operating and safety rules and, at that time, is given oral instruction on the meaning of rules, why they exist, and the aspects of the operation affected by the various classifications of rules for yard and road service. Within 90 days of entering service, we require a new employee to take a written examination upon the rules and at the same time this employee receives a further oral examination, both to insure his knowledge of the rules and important physical characteristics of the property relating to their application. The results of this written examination are reviewed orally, and the new employee is required to correct any errors made in his written examination.

Following this, rules classes, or refresher courses if you will, are held annually with operating employees. Additionally, in connection with promotion to the position of locomotive engineer or to the position of conductor, very detailed written examinations are required. The passing grade for promotion is 80 percent, and here again errors in the written examination are reviewed with the employee involved.

This is all supplemented by daily, and even hourly, observance of our men by competent supervision. As a further check we require a large number of on-the-ground rules observance tests which our trainmasters and road foremen of engines conduct each month.

I might say there were 3,006 on the Lackawanna during the first 3 months of this year. A failure to properly observe rules results in investigation and, if necessary, discipline. A continuing record is maintained of these efficiency checks, so that we can see at a glance what rules are being improperly observed. From my experience I know that other railroads follow generally similar procedures. It is a continuing and never-ending responsibility.

Given rules which are properly formulated by men of experience, a good schooling in the rules to the employees involved, efficiency checks carefully and properly conducted by competent supervision, proper application of discipline where necessary to secure adherence to operating rules, and a railroad has reason to expect safe train and yard operation.

On-the-ground employees take as much pride as management in safe railroading. There is no substitute for that sense of responsibility for safe operation which comes from competent employees on the job and responsible management accountable to itself, and for itself, for the results attained. If you take away, if you impair the jurisdiction of management and superimpose upon it rules and requirements promulgated by bureaucracy, then incentive, responsibility, pride, efficiency, and safety are all weakened.

The railroad industry has a long way to go to attain perfection, but it can, and does, point with pride to a continuing improvement since the end of Government ownership after World War I in safety and efficiency. This did not just happen. Capital improvements just since 1945 have averaged more than $1 billion per year. Throughout the depression stockholders went without to avoid property deterioration and competitively it has taken improvements to avoid deterioration. This has meant unparalleled long-range planning by management.

To a substantial degree management support by employees is based upon respect. Respect is founded upon understanding, upon competence, upon fair and impartial discipline, and it is founded upon the establishment and enforcement of rules, fitted to the situations upon each railroad, which these employees know from their own experience are wise and sound and necessary.

In the past 4 weeks I have talked to 2,961 of our employees and their families about railroad safety and its importance upon our railroad. At one of those meetings a locomotive engineer told 600 of his fellow employees that the 3 injuries he had encountered over his 35 years of experience in every case related to his own failure to observe rules established for his own safety. Could there be a greater tribute paid to the justification for operating rules continuing to be in the hands of those men who are on the firing line every day, those men who combine accountability with responsibility?

It is fundamental that a major factor in railroad safety is adequate earnings. If the railroads do not have adequate earnings, there is no way to acquire the money which has to be spent to make improvements desirable for greater safety. Large expenditures are involved, and the Congress has great responsibility in the public interest for taking such action as will insure adequate earnings to this great industry—so fundamental to both our past history and our present and future economy.

It is my belief that this bill will result in lowered efficiency, lowered economy, lowered earnings and, for that reason, among others, in lowered standards of safety. It should not be approved by this committee.

That completes my prepared testimony, Mr. Chairman.

Senator POTTER. Mr. Shoemaker, I don't know whether you are familiar with the accident that occurred on the Duluth, South Shore, and Atlantic Railroad, I think in 1951, where the diesel at the front of the train and helper engine at the rear of the train stopped on a grade.

There was ice on the rails. So the front diesel detached itself to, I believe, to a sanding job on the rails or wheels to get more traction and then as he recoupled to the train, it is my understanding, he signaled to the rear engine but the rear engine didn't hear him.

The train started moving backward and they couldn't hold. The helper engine had assumed that they were just going back down the grade.

Now, there were many factors involved there as to the cause of the accident which resulted in the loss of life for two men. But one of the causes, it was brought out, was the fact that the rear engine didn't hear the whistle, the horn.

That is the same situation as brought out here, that Senator Monroney mentioned, that the man in the rear didn't know what the fellow in the front cab was doing, what the problem was.

To me, with all the technical know-how we have today, I just can't understand why we have to rely upon a whistle from the front engine to notify the fellow in the back that something is wrong or to give him his signal. It seems to me we should have a better means of communication. If we ran a war that way, we would never know where we were.

As a novice, and as a layman, I can't understand why we can't have better communications systems on our trains.

There was another example. It may be an isolated case. But it happened in Michigan and cost the lives of two men. I would like to have your comment on that.

Mr. SHOEMAKER. I will be glad to, Senator Potter. I am not familiar with the detail of that particular accident. Your summation and comment is that communication between the head end of that train and the rear end of that train apparently would have been helpful.

I think any railroadman would agree with you. A witness following me is going to give this committee some of the statistics of the tremendous increase in application of radio to train operation that is going on around the country.

Take our picture on the Lackawanna. We know right now that it is desirable to have head- and rear- end communication. It is going to take quite a lot of money to do it. We have been setting that money aside for 2 years. Why haven't we spent it? Why haven't we put in radio communication between rear and head end? For several reasons.

First, our fundamental communication system on the Lackawanna goes back 50 years to some leases with the Western Union. There is every reason for suspecting that Western Union may not continue their operation. They have put many of their operations into microwave. So we have had an outside company come in and analyze our communication system. Perhaps microwave is what we should have for basic communication.

Now, whatever radio or inductive communication we put on between the head end and rear end of our trains has to harmonize with our overall station-to-station communication system, because certainly it is desirable to look to the future and be able to communicate with trains from standing locations as well as just the head end and rear end themselves.

The second uncertainty in radio communication is quite a problem with radio people. The initial application of radio on an experimental basis was to put a permanently fixed set in the locomotive and a permanently fixed set in the caboose, and as to an accident, that does a pretty good job.

Back in the tremendous development of the walkie-talkie in World War II, there came the thought, "Well, why have a fixed radio in the caboose? Wouldn't it be helpful to safety if a walkie-talkie were made available that the crew on the rear end of the train could take up to location where they were going to set a car out, or come up to a location where they might have some defect on a car that they were going to look at, and tell the engineer exactly what was going on."

The CHAIRMAN. Or call a flag in?

Mr. SHOEMAKER. If a walkie-talkie was with the flagman.

The CHAIRMAN. To save the whistle.

Mr. SHOEMAKER. That is a good application of it. We have been doing some walkie-talkie experiments. The Rock Island has been doing the same thing.

I am only emphasizing that all of this is in somewhat of a developmental state as yet. I think there will be steady progress toward better communication.

Senator POTTER. In other words, you recognized the lack of better communications as a problem?

Mr. SHOEMAKER. Certainly we do.

Senator POTTER. And you say that the individual railroad companies themselves are going through an experimental period to determine which type of communication would best serve?

Mr. SHOEMAKER. Very definitely, Senator Potter. Are there any other questions, Mr. Chairman?

The CHAIRMAN. If there are no other questions, we thank you for appearing before us.

Mr. SHOEMAKER. I would like to make this one comment. There was some discussion yesterday of collective bargaining entering into operating and safety rules. I would like to clarify that as far as the Lackawanna and any other eastern railroad is concerned. At local safety meetings, divisional meetings, meetings with an individual yard and that sort of thing, there is constant discussion of safety rules and operating rules.

First, let me make this distinction. An operating rule is the bible of operation. A safety rule is apt to be recommended workmanship. It is calling a man's attention to never having a chipped hammer, wearing safety shoes where hazards might occur to his feet.

But both sets of rules are discussed at these meetings, and our men make all kinds of suggestions, constructive ones. When it comes to operating rules themselves, and the publishing of them, management does that and is responsible for the rules that it puts out. Men may be disciplined for violation of those rules. Our experience has been that the brotherhoods do not want to, in a formal way, be responsible for the rules, as such. That has not withheld constructive suggestions from them. But they have left the formulation and responsibility for the rules completely in the hands of our management in the East.

Senator POTTER. What you are saying is that safety regulations are never a part of your negotiations as to bargaining for a contract?

Mr. SHOEMAKER. To my knowledge, I have never known them to be. We get fine cooperation without their entering into collective bargaining at all.

Senator POTTER. Do you get many suggestions from the brotherhoods as to what type of safety regulations should be put into effect?

Mr. SHOEMAKER. We get fine suggestions from them, sir. They develop in these local meetings, discussions at the local level, for the most part.

Senator POTTER. But it is never part of your negotiation for contract; it is never written into your contracts, certain rules for safety?

Mr. SHOEMAKER. It is not, sir.

Senator POTTER. I would like to ask one question for my own benefit. What in the world does a chipped hammer have to do with safety?

Mr. SHOEMAKER. Just this: If the head of a hammer has a piece chipped out of it so that when a man using it as a track maul, for example, hitting track spikes, if the head is chipped enough so that it will slide off the spike instead of hitting a firm blow, that sliding blow may result that it will go on somebody's toe or leg. That kind of accident has happened.

It goes down to the technique of workmanship of checking your tools, and that sort of thing. May I thank the committee for its courtesy in listening to me.

The CHAIRMAN. That is our middle name—courtesy, sir.

Our next witness will be Mr. E. P. Stine.

We have a statement from Mr. John T. Corbett, national legislative representative, Brotherhood of Locomotive Engineers, which will be inserted in the record at this point.

(The statement referred to is as follows:)

STATEMENT OF JOHN T. CORBETT, NATIONAL LEGISLATIVE REPRESENTATIVE, BROTHERHOOD OF LOCOMOTIVE ENGINEERS

I appear in support of the provisions of S. 1401, which would authorize the Interstate Commerce Commission to require carriers engaged in interstate commerce by railroad to install power brakes which comply with specifications and requirements prescribed by the Commission and to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power brakes.

After attaining more than a half-century of seniority in locomotive service as a locomotive fireman and as a locomotive engineer, it would be my opinion that there are real needs for additional safety conditions upon railroad trains and the recent accident at the Washington station must support the opinion.

There never has been any means which will keep a locomotive engineer informed, at all times, as to whether there is proper air pressure throughout the airbrake "train line" to the rear of the train, and I have often wondered why those who desire to have the safety of proper working airbrakes throughout all cars in all trains, have not considered it proper to require a return pipe from the rear of the train to a gage on the locomotive which would permit the locomotive engineer to know at all times whether his "train line" had full pressure throughout the length of the train.

The provisions of S. 1401 would appear to authorize the Interstate Commerce Commission to require the installation, inspection, maintenance, and repair of any and all equipment which may improve present airbrake equipment and to provide such rules as may be considered necessary for the continued operation of such equipment for the safety of train service employees and of the traveling public.

We believe such authority a safety "must."

The CHAIRMAN. Mr. Stine, you may proceed in your own way.

STATEMENT OF E. P. STINE, ASSISTANT TO VICE PRESIDENT-OPERATION, CHICAGO, BURLINGTON & QUINCY RAILROAD CO.

Mr. STINE. My name is E. P. Stine. I am assistant to vice president-operation of the Chicago, Burlington & Quincy Railroad Co., with headquarters at Chicago, Ill. My service with that railroad extends over a period of 32 years, of which 23 years were in the capacity of trainmaster, assistant superintendent, division and general superintendent. My duties in these positions and in my present position have required that I deal intimately with the matter of safety and communications installations and also with the establishment and observance of rules for the operation of trains.

My testimony is confined to S. 539 and I shall not undertake to say anything with respect to S. 1401.

I appear in opposition to S. 539 on behalf of the Association of American Railroads, which comprises a membership representing 97.5 percent of the total mileage of all class I railroads and 96.5 percent of the total annual revenues of those railroads.

The CHAIRMAN. In that respect it is different from all Gaul?

Mr. STINE. I think that is right. There are only two parts here.

The CHAIRMAN. Omnia Gallia. You remember those days.

Mr. STINE. As is apparent from a reading of the bill, it is divisible into two principal parts, which are susceptible of separate treatment, namely, that provision of the bill which would extend the authority of the Commission over signal installations to include authority with respect to telegraph, telephone, radio, inductive, or other wayside and/or train communication systems, and the second and even more far-reaching part which would afford the Commission authority and responsibility with respect to the establishment and observance of rules and regulations for the operation of trains. I shall deal first with the matter of installation of communication systems and second with the matter of train operation.

At the outset I call attention to the fact that in appraising the necessity or justification for use of any given safety device, it is necessary to have in mind that no one device covers the field. Safety in the operation of trains depends upon a multitude of factors, including adequate and properly maintained roadbed, tracks, bridges, and other roadway structures, adequate and properly maintained signaling systems of various descriptions, and, of course, adequate communication facilities. It is the function and responsibility of railroad management to apply its available resources to improvement and upkeep throughout this entire field, and attention cannot properly be riveted upon any single aspect of the matter.

Transportation is the specific business of railroad management, and it is a highly competitive business. To meet competition successfully the railroads must be operated efficiently, and a safe operation is the first requirement for an efficient operation. Generally speaking, devices now in use on railroads for the promotion of safety or efficiency were given their initial tests in the field because certain men of railroad management had the courage to experiment with new things. They have reached their present state of development because of such experiments, and I believe the record will show that every device which proved to have merit has been adopted as fast as

financial obligations would permit. Competition is a great incentive for improvement. On the other hand, compulsion tends to destroy incentive and retard progress. The railroads submit to your committee that there is no occasion for subjecting them to governmental compulsion with regard to the use of radio and other train communication systems.

Specifically with reference to radio communication systems, these cannot be regarded at the present stage of development as in any sense an adequate substitute for signaling and communication devices in use before the advent of radio. It is probably not entirely accurate to say that its use in railroad operation is still in a strictly experimental stage. But it remains true that the use of radio as a means of communication in train operation is a relatively recent innovation and that its adaptation to such use is still in the formative stage. Many early problems with respect to radio have been solved, but others remain unsolved and serve to prevent installation of radio on a wholesale basis. Notwithstanding, the railroads have made steady progress in the use of radio and their effort is a continuing one. It has already found a useful place for end-to-end communication on trains and in yard operations, and it is being rapidly adopted for such purposes.

The committee will be interested in a tabulation which I should like at this point to submit for the record.

The CHAIRMAN. Without objection, the tabulation will be inserted in the record at this point.

(The tabulation referred to is as follows:)

Summary of railroad installations of train communication systems—Railways of all classes in the United States

Type of system	Number of installations	Miles of road	Wayside	Locomotives	Cabooses	Other mobile	Pack sets
LINE ROAD INSTALLATIONS							
Radio:							
Jan. 1, 1953	70	35,861	282	1,429	1,535	37	460
Jan. 1, 1952	56	28,804	199	1,081	1,146	37	240
Jan. 1, 1951	39	14,219	116	385	305	18	19
Jan. 1, 1950	30	9,000	93	175	147	17	8
Jan. 1, 1949	17	5,743	34	98	65	2	2
Inductive:							
Jan. 1, 1953	24	4,956	176	1,078	277	18	2
Jan. 1, 1952	21	4,299	169	921	307	2	25
Jan. 1, 1951	24	4,390	151	702	218	3	25
Jan. 1, 1950	17	3,678	136	623	206	3	14
Jan. 1, 1949	9	2,408	113	572	190	2	----
Combination radio and inductive:							
Jan. 1, 1953	2	1,103	27	18	33	----	2
Jan. 1, 1952	2	1,103	27	18	33	----	2
Jan. 1, 1951	2	1,103	27	33	33	----	----
Jan. 1, 1950	2	1,103	27	33	33	----	----
Jan. 1, 1949	2	1,103	26	30	30	----	----
Combination inductive and wire intercommunications:							
Jan. 1, 1953	1	87	1	2	2	----	----
Jan. 1, 1952	1	87	1	2	2	----	----
Jan. 1, 1951	1	87	1	2	2	----	----
Jan. 1, 1950	1	87	1	2	2	----	----
Jan. 1, 1949	----	----	----	----	----	----	----
Wire intercommunication system:							
Jan. 1, 1953	5	2,819	----	23	----	33	----
Jan. 1, 1952	6	4,426	----	79	----	42	----
Jan. 1, 1951	5	4,426	----	56	----	23	----
Jan. 1, 1950	3	3,951	----	53	----	20	----
Jan. 1, 1949	6	6,800	----	46	2	22	----

Summary of railroad installations of train communication systems—Railways of all classes in the United States—Continued

Type of system	Number of installations	Miles of road	Wayside	Locomotives	Cabooses	Other mobile	Pack sets
LINE ROAD INSTALLATIONS—Continued							
Commercial radio service used in railroad operation:							
Jan. 1, 1953	3	299	1	3		3	1
Jan. 1, 1952	3	299	1	2		5	4
Jan. 1, 1951	1	200				1	
Jan. 1, 1950	1	200				1	
Jan. 1, 1949							
Commercial public radio telephone service:							
Jan. 1, 1953	6	1,778				15	
Jan. 1, 1952	6	1,778				15	
Jan. 1, 1951	5	1,309				11	
Jan. 1, 1950	5	1,309				11	
Jan. 1, 1949	4	1,105				9	
Total, line road:							
Jan. 1, 1953	111	46,902	487	2,553	1,847	106	465
Jan. 1, 1952	95	40,796	397	2,103	1,488	101	271
Jan. 1, 1951	77	25,734	295	1,178	558	56	44
Jan. 1, 1950	59	19,328	257	886	388	52	22
Jan. 1, 1949	38	17,159	173	746	287	35	2
YARD AND TERMINAL INSTALLATIONS							
Radio:							
Jan. 1, 1953	174		298	1,263	6	64	292
Jan. 1, 1952	159		227	943	5	45	181
Jan. 1, 1951	123		161	735	4	33	92
Jan. 1, 1950	93		120	583	3	25	41
Jan. 1, 1949	64		91	448	4	29	14
Inductive:							
Jan. 1, 1953	11		17	36		2	
Jan. 1, 1952	11		16	39			
Jan. 1, 1951	14		20	53		2	
Jan. 1, 1950	14		18	54			
Jan. 1, 1949	15		21	58			
Commercial leased radio service:							
Jan. 1, 1953	9		5	50		2	
Jan. 1, 1952	8		5	40			
Jan. 1, 1951	6			26		1	
Jan. 1, 1950	4			22		1	
Jan. 1, 1949	5			31			
Total, yard and terminal:							
Jan. 1, 1953	194		320	1,349	6	68	292
Jan. 1, 1952	178		248	1,022	5	45	181
Jan. 1, 1951	143		181	814	4	36	92
Jan. 1, 1950	111		138	659	3	26	41
Jan. 1, 1949	84		112	537	4	29	14
Grand total:							
Jan. 1, 1953	305	46,902	807	3,902	1,853	174	757
Jan. 1, 1952	273	40,796	645	3,125	1,493	146	452
Jan. 1, 1951	220	25,734	476	1,992	662	92	136
Jan. 1, 1950	170	19,328	395	1,545	391	78	63
Jan. 1, 1949	122	17,159	285	1,283	291	64	16

Source: Bureau of Safety, Interstate Commerce Commission.

Mr. STINE. It shows the progress in installation of radio and other train communication systems over the period of January 1, 1949, to January 1, 1953. These statistics were taken from reports of the Bureau of Safety of the Interstate Commerce Commission. The figures for January 1, 1953, have not yet been published but are available in preliminary worksheet form at the offices of the Commission.

Senator POTTER. Mr. Chairman, could I ask a question at this point?

The CHAIRMAN. Certainly.

Senator POTTER. Do you have any idea as to how many trains, the percentage of trains which have front-to-rear radio communication at the present time?

Mr. STINE. No, I wouldn't know about the percentage of trains. I have some tabulations here which show the number of authorizations that have been given for use of radio on trains, which cover a considerable area.

Senator POTTER. If you are going to cover that later, I will wait.

Mr. STINE. I will.

Senator MONRONEY. Has the American Association of Railroads passed any recommendation whatsoever endorsing the idea of end-to-end radio communication?

Mr. STINE. Well, not as a matter of endorsement. There have been certain rules formulated for the use of radio. It is a part of our operation now.

Senator MONRONEY. On the Burlington?

Mr. STINE. On many railroads; on the Burlington, and many other railroads.

Senator MONRONEY. The point I was trying to get at is that the last witness said the American Association of Railroads was fully able without any public action or cognizance to give directives to their membership or to encourage the progress for safety.

I wondered if the American Association of Railroads had ever taken any formal action for the endorsement of urging its members to adopt end-to-end communication.

Mr. STINE. As to any formal action, I would be unable to say, Senator. As I hope to show how these rules and how these operations are formulated by the train rules committee of the association, it may serve to answer your question.

Senator MONRONEY. I will wait until you get to that part.

Senator POTTER. You are speaking now primarily of the company you are affiliated with, are you not?

Mr. STINE. Specifically as to the operation I am familiar with, but I also know that other railroads have done as much or perhaps even more than we have with respect to developing radio, because it is still in the state of development.

Personally, I might say I am quite enthused about radio. I think it has great possibilities. But exactly what those possibilities are, I do not know, and I do not know where we are going to end with radio.

Senator POTTER. Do you have end-to-end radio communication on all trains of your company?

Mr. STINE. We have on all of our so-called time-freight trains which are operated with our diesel power.

Senator POTTER. What type of radio do you have? Is it an installed set?

Mr. STINE. The radio on the locomotive is a permanent fixture. We have some of our cabooses equipped with permanent radio. We have made great use of the walkie-talkie because it is much more flexible in switching operations, in setting out and picking up cars than the radio which is fixed inside the caboose, because so many of the operations which require the trainmen to communicate with the engineer come at a time when the trainman is away from the caboose, on the ground or on top of the car.

Senator POTTER. Another witness testified to the fact that it wouldn't be sound to have a warning system in every car. I am thinking now, probably, of passenger cars. What are your views on that?

Mr. STINE. I don't know of any device exactly like the device you have in mind where each car would be equipped. But that is one purpose that we use the end-to-end radio for, so that the engineer may communicate with the conductor and vice versa.

I don't think there would be anything impractical about it. I don't know of anything that has been developed.

Senator POTTER. It wouldn't seem that way to me. The idea that you might frighten passengers with a series of whistles does not neccessarily follow. The train going at excessive speed would frighten most passengers as much as anything else.

Mr. STINE. I wouldn't want to advocate a device where you would broadcast the information as to the trouble you were in as to the passengers.

I think any device that would be developed and would be practical along those lines would eliminate that feature.

The tabulation is in two principal parts, the first dealing with line road installations and the second with yard and terminal systems. The totals for the two appear on page 3. In the 5-year period ended January 1, 1953, the number of train-communication systems on the railroads of the United States increased from 122 to 305. The road mileage covered by them increased from 17,000 to nearly 47,000, not including the yard and terminal trackage thus equipped. The number of equipped wayside stations increased from 285 on January 1, 1951, to 807 on January 1, 1953. Installations on equipment increased from 1,283 to 3,902 locomotives, from 291 to 1,853 cabooses and from 64 to 174 other mobile units. In addition, pack sets—walkie-talkies—in use increased from 16 to 757.

I will not take the time of the committee to discuss the details of the various kinds of communication systems in use on railroads today, but the facts are shown in the tabulation for anyone desiring to analyze them. I believe that it is entirely clear from these statistics that the railroads have made and are making marked and substantial progress in the development and use of train-communication systems.

The committee will understand that the railroads are under the necessity in connection with the use of radio of obtaining authorization from the Federal Communications Commission. For the information of the committee, I should like at this point to insert in the record a table listing railroad radio authorizations as of January 1, 1953, from which it will be found that such authorizations have been obtained and are outstanding in the total number of 873. These authorizations cover not only facilities already in service but also others for which license has been obtained in expectation of their use.

The CHAIRMAN. Without objection, the table will be inserted in the record at this point.

(The table referred to is as follows:)

Railroad radio authorizations, Jan. 1, 1953

Railroad and transmitter location	Call sign	Nature of authorization
Alabama Great Southern:		
(Near) Birmingham, Ala	KIF394	Y&T, mobile relay, 161.43; 161.67 mc.
Do	KIF373	YTB, 161.25 mc.
Mobile	KB6815	Y&T, 50 units, 161.07; 161.25; 161.49; 161.67 mc.
Alton & Southern:		
Dupo, Ill	KSC245	YTB, 160.65 mc.
East St. Louis, Ill	KSA422	Do.
St. Louis, Mo	KAC946	Do.
Mobile	KA5577	Y&T, 20 units, 160.65 mc.
Apache:		
McNary, Ariz	KOA761	TB, 159.69 mc.
Mavarick, Ariz	KOA760	Do.
Mobile	KAPZ	Train, 5 units, 159.69 mc.
Atchison, Topeka & Santa Fe:		
Ashfork, Ariz	KOF364	TB, 160.65 mc.
Flagstaff, Ariz	KOF366	Do.
Seligman, Ariz	KOB631	Do.
SF milepost 360, Ariz	KOF365	Do.
Sunshine, Ariz	KOF367	Do.
Williams, Ariz	KOF363	Do.
Winslow, Ariz	KOA314	Do.
Bakersfield, Calif	KMA355	Do.
Barstow, Calif	KMA356	Do.
Needles, Calif	KMB267	Do.
San Bernardino, Calif	KMA332	Do.
Chicago, Ill	KSA406	Do.
Gallup, N. Mex	KKI204	Do.
Mobile	KA4986	Train, 380 units, 160.65 mc.
Barstow, Calif	KMB556	YTB, 161.19 mc.
Los Angeles, Calif	KMB622	YTB, 161.37 mc.
Do	KMA434	Do.
Do	KMB622	Do.
Richmond, Calif	KMA209	Do.
San Bernardino, Calif	KMA347	Do.
Do	KMA692	Do.
Do	KMA693	Do.
San Francisco, Calif	KMA346	Do.
Pueblo, Colo	KAB480	YTB, 160.29; 161.37; 161.73 mc.
Do	KAB482	YTB, 161.37; 161.73 mc.
Chicago, Ill	KSA951	YTB, 160.65 mc.
Do	KSA569	Do.
Joliet, Ill	KSB584	Do.
Fort Madison, Iowa	KAD599	YTB, 161.37 mc.
Argentine, Kans	KAA933	YTB, 160.65 mc.
Do	KAA351	YTB, 160.47; 160.65 mc.
Do	KAA436	YTB, 160.95 mc.
Do	KAA758	YTB, 161.37 mc.
Do	KAB501	YTB, 161.19 mc.
Kansas City, Mo	KAA932	YTB, 160.65 mc.
Albuquerque, N. Mex	KKH997	YTB, 161.37 mc.
Belen, N. Mex	KOPZ	Do.
Do	KKC246	YTB, 161.07; 161.73 mc.
Gallup, N. Mex	KKI204	YTB, 160.65 mc.
Amarillo, Tex	KKH814	YTB, 161.37 mc.
Do	KKI299	YTB, 160.29; 161.07; 161.73 mc.
Do	KKI533	Y&T, mobile relay, 161.73 mc.
Brownwood, Tex	KKG765	YTB, 161.37 mc.
Dallas, Tex	KKC415	Do.
Fort Worth, Tex	KKA536	Do.
Sweetwater, Tex	KKH237	Do.
Mobile	KA2687	Y&T, 492 units (frequencies as assigned AT&SF).
Do	KA2691	RU, 39 units (frequencies as assigned AT&SF).
Mohave County, Ariz	KOF345	Train (developmental), base, 160.65 mc.
Mobile	KB9279	Train (developmental), 5 units, 160.65 mc.
Beaumont, Tex	KKC63	Developmental, control 6830 mc.
Galveston, Tex	KKC65	Developmental, control 6590 mc.
Morey, Tex	KKC64	Developmental, relay 6680; 6830 mc.
Patton, Tex	KKC62	Developmental, relay 6680; 6740 mc.
White's Ranch, Texas	KKC66	Developmental, relay 6590; 6930 mc.
Atlanta & St. Andrews Bay:		
Panama City, Fla	KIF847	TB, 160.77 mc.
Mobile	KIF847	Train, 25 units, 160.77 mc.
Atlanta & West Point: Mobile	KA9639	Train, 24 units, 161.67 mc.
Atlantic Coast Line:		
Mobile	KB7917	Train, 6 units, 161.73 mc.
Birmingham, Ala	KID586	YTB, 160.59 mc.
Jacksonville, Fla	KIC492	YTB, 160.29 mc.
Do	KIB292	Do.
Lakeland, Fla	KIC687	Do.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Atlantic Coast Line—Continued		
Tampa, Fla	KIC704	YTB, 160.29; 160.59 mc.
Do	KIC705	Do.
Atlanta, Ga	KID587	YTB, 160.29 mc.
Rocky Mount, N. C	KIG208	Do.
Wilmington, N. C	KID420	Do.
Charleston, S. C	KIG209	Do.
Columbia, S. C	KIG481	Do.
Florence, S. C	KIC493	Do.
Sumter, S. C	KIG482	Do.
Mobile	KA4510	Y&T, 117 units, 160.29; 160.59 mc.
Baltimore & Ohio:		
East St. Louis, Ill	KSB297	TB, 160.53 mc.
Cheat River, Pa	KGB553	TB, 160.23; 160.53 mc.
Connellsville, Pa	KGB938	Do.
Leith, Pa	KGB556	Do.
Oliver Tower, Pa	KGB641	Do.
Smithfield, Pa	KGB554	Do.
South Connelsville, Pa	KGB555	Do.
Fairmont, W. Va	KQB937	Do.
Hoard, W. Va	KQC381	Do.
Jordan, W. Va	KQC373	Do.
Little Falls, W. Va	KQB938	Do.
Morgantown, W. Va	KQB944	Do.
Mobile	KA6064	Train, 68 units, 160.53; 160.23 mc.
Baltimore, Md	KGA847	YTB, 160.41 mc.
Do	KGB557	YTB, 160.89; 161.07 mc.
Do	KGB558	Do.
Willard, Ohio	KQA234	YTB, 159.93; 160.89 mc.
Do	KQA378	Do.
Newcastle, Ohio	KGA846	YTB, 159.93 mc.
Mobile	KA2192	Y&T, 26 units, 159.93; 160.41; 160.89; 161.07 mc.
Baltimore & Ohio Chicago Terminal:		
Chicago, Ill	WIUJ	YTB, 159.93 mc.
Mobile	WIUQ	Y&T, 1 unit, 159.93 mc.
Bangor & Aroostook:		
Caribou, Maine	KOC545	TB, 159.99 mc.
Hermon, Maine	KCA827	Do.
Houlton, Maine	KOC546	Do.
Millinocket, Maine	KCA828	Do.
Oakfield, Maine	KCA829	Do.
Presque Isle, Maine	KCB871	Do.
Searsport, Maine	KCB510	Do.
Sherman, Maine	KCA542	Do.
South LaGrange, Maine	KCA826	Do.
Squapan, Maine	KCC544	Do.
Van Buren, Maine	KCC547	Do.
West Seboeis, Maine	KCA830	Do.
Mobile	KA4341	Train, 35 units, 159.99 mc.
Barre & Chelsea: Mobile	KA3312	Train, 3 units, 160.17 mc.
Beaufort & Morehead:		
Beaufort, N. C	KIG325	TB, 159.51 mc.
Mobile	KIG325	Train, 7 units, 159.51 mc.
Bessemer & Lake Erie:		
Albion, Pa	KGA881	TB, 160.83; 161.31 mc.
Greenville, Pa	KGA884	TB, 160.83 mc.
Meadville Junction, Pa	KGA883	TB, 160.83; 161.31 mc.
Mobile	KA3561	Train, 93 units, 160.83; 161.31 mc.
Bevier & Southern:		
Bevier, Mo	KAD426	TB, 160.35 mc.
Mobile	KA9495	Train, 10 units, 160.35 mc.
Birmingham Southern:		
Bessemer, Ala	KIG399	YTB, 160.89 mc.
Birmingham, Ala	KIG398	Do.
Ensley, Ala	KIA420	YTB, 160.29; 160.89 mc.
Fairfield, Ala	KIA412	Do.
Mobile	KA2688	Y&T, 40 units, 160.29; 160.89 mc.
Boston & Maine:		
Boston, Mass	WESM	TB, 159.93 mc (EE); 159.69 mc (YT).
Greenfield, Mass	WETS	Do.
Mechanicville, N. Y	WESY	Do.
Mobile	KA2024	Train, 11 units, 159.69; 159.93 mc.
Mechanicville, N. Y	KEA903	YTB, 160.11 mc.
Mobile	KA2023	Y&T, 18 units, 160.11 mc.
Brooklyn Eastern District Terminal:		
Brooklyn, N. Y	KEA910	YTB, 160.59 mc.
Mobile	KA5659	Y&T, 3 units, 160.59 mc.
Carbon County:		
Columbia, Utah	KOA280	YTB, 161.37 mc.
Mobile	KA4117	Y&T, 2 units, 161.37 mc.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Central of Georgia:		
Coosa Pines, Ga	KIC277	TB, 160.65 mc.
Mobile	KA6501	Train, 10 units, 160.65 mc.
East Point, Ga	KIB541	YTB, 161.19 mc.
Mobile	KA5168	Y&T, 8 units, 161.19 mc.
Central Railroad of New Jersey:		
Mobile	KA6075	Train, 6 units, 161.73 mc.
Jersey City, N. J	KEA618	YTB, 160.89 mc.
Allentown, Pa	KGA854	Do.
Mobile	KA5208	Y&T, 7 units, 160.89 mc.
Do	KA5722	Y&T, 2 units, 160.89 mc.
Chattahoochee Valley:		
West Point, Ga	KID505	YTB, 160.05 mc.
Mobile	KA4274	Y&T, 2 units, 160.05 mc.
Chesapeake & Ohio (P. M. and Chesapeake districts):		
Columbus, Ohio	KQA688	TB, 160.41; 161.31 mc.
Delaware, Ohio	KQA690	Do.
Marion, Ohio	KQA689	Do.
Fostoria, Ohio	KQB347	Do.
Upper Sandusky, Ohio	KQB292	Do.
Walbridge, Ohio	KQB323	Do.
Flint, Mich	KQC364	TB, 160.29; 160.41 mc.
Grand Rapids, Mich	KQA573	Do.
Muskegon, Mich	KQB853	Do.
Detroit, Mich	KQA833	Do.
Mobile	KA4099	TB, 325 units, 160.29 (Mich.); 160.41; 161.31 mc.
Chicago, Ill	KSA852	YTB, 160.41; 161.31 mc.
Russell, Ky	KIF838	YTB, 160.89; 161.37 mc.
Ludington, Mich	KQA873	YTB, 160.11 mc.
Milwaukee, Wis	KSA940	Do.
Manitowoc, Wis	KSA887	Do.
Newport News, Va	KIA700	YTB, 160.89 mc.
Do	KIB781	YTB, 160.11 mc.
Walbridge, Ohio	KQB878	YTB, 160.29; 161.37 mc.
Mobile	KA4101	Y&T, 77 units, 160.11; 160.29; 160.89; 160.41; 161.31 mc.
Chesapeake-Western:		
Bridgewater, Va	KIB717	TB, 159.81 mc.
Elkton, Va	KIB716	Do.
Harrisonburg, Va	KIB715	Do.
McGaheysville, Va	KIF636	Do.
Staunton, Va	KIB718	Do.
Weyers Cave, Va	KIC936	Do.
Mobile	KA5679	Train, 4 units, 159.81 mc.
Chicago & Eastern Illinois:		
Mobile	KA9581	Train, 4 units, 160.29 mc.
Evansville, Ind	KSB448	YTB, 161.61 mc.
Mobile	KA8751	Y&T, 7 units, 161.61 mc.
Chicago & Northwestern:		
Mobile	KB8634	Train, 28 units, 160.89 mc.
Berkeley, Ill	KSA357	YTB, 160.89 mc.
Do	KSA777	YTB, 161.13 mc.
Mobile	KA5043	Y&T, 8 units, 160.89 mc.
Chicago, Burlington & Quincy:		
Aurora, Ill	KSC292	TB, 159.69 mc.
Hinckley, Ill	KSC293	Do.
Akron, Colo	KAA226	Do.
Brush, Colo	KAA225	Do.
Mobile	KA7817	Train, 499 units, 159.69 mc.
Denver, Colo	KAC385	YTB, 159.69 mc.
Do	KAE821	YTB, 159.99 mc.
Chicago, Ill	KSA993	YTB, 159.69 mc.
Galesburg, Ill	KSA969	YTB, 159.69; 160.23 mc.
Do	KSA970	Do.
Do	KSA971	Do.
Council Bluffs, Iowa	KAD737	YTB, 159.69; 159.99 mc.
North Kansas City, Mo	KAB212	YTB, 159.69 mc.
Do	KAA246	YTB, 160.89 mc.
Lincoln, Nebr	KAB887	YTB, 159.69; 159.99 mc.
Omaha, Nebr	KAD736	Do.
Lincoln, Nebr	KAB888	Do.
Forth Worth, Tex	KKI370	YTB, 159.69 mc.
Mobile	KA2235	Y&T, 250 units, 160.23; 159.99; 160.89; 159.69 mc.
Chicago Great Western:		
Chicago, Ill	KSC699	TB, 159.57; 160.17 mc.
Ingalton, Ill	KSC662	Do.
Stockton, Ill	KSC661	Do.
South Freeport, Ill	KSC701	Do.
Allison, Iowa	KAF306	Do.
Clarion, Iowa	KAD807	Do.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Chicago Great Western—Continued		TB, 159.57; 160.17 mc.
Clear Lake Junction, Iowa	KAF286	Do.
Council Bluffs, Iowa	KAF402	Do.
Des Moines, Iowa	KAD955	Do.
Dubuque, Iowa	KAF307	Do.
Dyersville, Iowa	KAE730	Do.
Farley, Iowa	KAF285	Do.
Harlan, Iowa	KAE998	Do.
Lorimor, Iowa	KAE803	Do.
Mason City, Iowa	KAF286	Do.
McIntire, Iowa	KAF287	Do.
New Hampton, Iowa	KAF288	Do.
Oelwein, Iowa	KAD429	Do.
Waterloo, Iowa	KAE724	Do.
Austin, Minn	KAF302	Do.
Hayfield, Minn	KAD959	Do.
Marshalltown, Minn	KAD960	Do.
Randolph, Minn	KAF301	Do.
South St. Paul, Minn	KAE689	Do.
Conception Junction, Mo	KAE693	Do.
Kansas City, Mo	KAC383	Do.
St. Joseph, Mo	KAD954	Do.
Mobile	KA5309	Train, 185 units, 160.17; 159.57 mc.
Chicago, Ill	KSC904	YTB, 159.57; 160.17 mc.
Olewein, Iowa	KAE725	Do.
St. Paul, Minn	KAF284	Do.
Chicago, Milwaukee, St. Paul & Pacific:		
Appleton, Minn	KAC349	TB, 160.77 mc.
Minneapolis, Minn	KAE837	Do.
Montevideo, Minn	KAC351	Do.
St. Paul, Minn	KAB691	Do.
Aberdeen, S. Dak	KAC375	Do.
Bristol, S. Dak	KAC350	Do.
Summit, S. Dak	KAC348	Do.
Milwaukee, Wis	KSC618	Do.
Mobile	KA3637	Train, 280 units, 160.77 mc.
St. Paul, Minn	KAB691	YTB, 160.41 mc.
Milwaukee, Wis	KSC617	YTB, 161.43 mc.
Do	KSC618	YTB, 160.77 mc.
Mobile	KA7494	Y&T, 5 units, 160.41 mc.
Chicago, Rock Island and Pacific:		
Temporary base (20 stations)	KSC435 through KSC454.	TB, 161.61 mc (developmental).
Temporary base (6 stations)	KSC461 through KSC466.	Do.
Mobile	KA5578	Train, 123 units, 161.61 mc.
Little Rock, Ark	KKH885	YTB, 161.61 mc.
Burlington, Colo	KAE853	Do.
Flagler, Colo	KAE851	Do.
Genoa, Colo	KAE852	Do.
Limon, Colo	KAE850	Do.
Blue Island, Ill	KSA950	Do.
Chicago, Ill	KSA949	Do.
Do	KSA943	Do.
Joliet, Ill	KSB864	Do.
Morris, Ill	KSC776	Do.
New Lenox, Ill	KSB610	Do.
Peoria, Ill	KSB863	Do.
Silvis, Ill	KSB611	Do.
Des Moines, Iowa	KAA989	Do.
Bucklin, Kans	KAE858	Do.
Colby, Kans	KAE864	Do.
Dresden, Kans	KAE863	Do.
Goodland, Kans	KAE865	Do.
Greenburg, Kans	KAE857	Do.
Herington, Kans	KAE856	Do.
Hutchinson, Kans	KAC943	Do.
Kansas City, Kans	KAA990	Do.
Liberal, Kans	KAE861	Do.
McFarland, Kans	KAE866	Do.
McPherson, Kans	KAE855	Do.
Meade, Kans	KAE860	Do.
Mineola, Kans	KAE859	Do.
Norton, Kans	KAE862	Do.
Pratt, Kans	KAE854	Do.
Topeka, Kans	KAE849	Do.
Minneapolis, Minn	KAA988	Do.
Eldon, Mo	KAC944	Do.
El Reno, Okla	KKE862	Do.
Dalhart, Tex	KKH888	Do.
Guymon, Tex	KKH886	Do.
Stratford, Tex	KKH887	Do.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Chicago, Rock Island and Pacific—Continued		Developmental (2 transmitters at each relay station):
Clayton, Kans	KAB62	Relay, 6680; 6740 mc.
Goodland, Kans	KAB63	Fixed, 6680 mc.
Dresden, Kans	KAB64	Relay, 6590; 6830 mc.
Rexford, Kans	KAB65	Relay, 6680; 6740 mc.
Levant, Kans	KAB66	Relay, 6,590; 6,830 mc.
Norton, Kans	KAB67	Fixed, 6,830 m.
Chicago, South Shore & South Bend:		
Michigan City, Ind	KSA868	TB, 161.01 mc.
Do	KSC908	TB, 161.37 mc.
New Carlisle, Ind	WRVR	Do.
Shearson (East Chicago), Ind	WRVQ	TB, (2 transmitters), 161.37 mc.
Mobile	KA5438	Train, 97 units, 160.01 mc.
Clinchfield:		
Johnson City, Tenn	KID423	YTB, 161.55 mc.
Kingsport, Tenn	KID427	Do.
Mobile	KA8500	Y&T, 8 units, 161.55 mc.
Columbus & Greenville:		
Greenville, Miss	KKB874	YTB, 160.23 mc.
Mobile	KA4912	Y&T, 1 unit, 160.23 mc.
Colorado & Southern: Mobile	KA5715	Train, 55 units, 159.69 mc.
Delaware, Lackawanna & Western:		
Mobile	KA3248	Train, 35 units, 161.37 mc.
Hoboken, N. J	KEA908	YTB, 160.29 mc.
Mobile	KA5657	Y&T, 12 units, 160.29 mc.
Denver & Rio Grande Western:		
Denver, Colo	KAB201	TB, 159.81 mc.
Mobile	KA3193	Train, 165 units, 159.81 mc.
Alamosa, Colo	KAB200	YTB, 160.83 mc.
Denver, Colo	KAD753	YTB, 159.81; 16 .83 mc.
Do	KAA997	YTB, 161.13 mc.
Do	KAB222	YTB, 160.83 mc.
Do	KAA999	Do.
Grand Junction, Colo	KAD752	YTB, 159.81; 160.83 mc.
Do	KAE722	YTB, 161.13 mc.
Do	KAE965	YTB, Mobile relay, 160.83 mc.
Pueblo, Colo	KAB755	YTB, 160.83 mc.
Salida, Colo	KPJW	Do.
Helper, Utah	KOA979	Do.
Salt Lake City, Utah	KOA419	Do.
Mobile	KA3825	Y&T, 142 units, 160.83; 161.13 mc.
De Queen & Eastern:		
De Queen, Ark	KKF848	TB, 160.23 mc.
Dierks, Ark	KKF847	Do.
Process City, Ark	KKF843	Do.
Mobile	KA9096	Train, 20 units, 160.23 mc.
Des Moines & Central Iowa:		
Des Moines, Iowa	KAA968	TB, 161.19 mc.
Mobile	KA5505	Train, 10 units, 161.19 mc.
Detroit & Mackinac:		
Alpena, Mich	KQC784	TB, 160.23 mc.
Bay City, Mich	KQC785	Do.
Tawas City, Mich	KQD252	Do.
Mobile	KB7923	Train, 20 units, 160.23 mc.
Detroit, Toledo & Ironton:		
Dearborn, Mich	KQD241	YTB, 161.43 mc.
Flat Rock, Mich	KQA885	Do.
Wyandotte, Mich	KQD266	Do.
Mobile	KA5660	Y&T, 18 units, 161.43 mc.
Duluth, Missabe & Iron Range:		
Mitchell Yard (St. Louis), Minn	KAA463	YTB, 159.75 mc.
Proctor, Minn	KAA464	Do.
Mobile	KA3441	Y&T, 20 units, 159.75 mc.
Elgin, Joliet & Eastern:		
Whiting, Ind	KSA960	YTB, 160.35 mc.
Mobile	KA5628	Y&T, 7 units, 160.35 mc.
Erie:		
Hohokus, N. J	KEA496	TB, 160.05 mc.
Rutherford, N. J	KEA440	Do.
Alfred, N. Y	KEA757	Do.
Andover, N. Y	KEA751	Do.
Belfast, N. Y	KEA754	Do.
Buffalo, N. Y	KEB522	TB, 160.05 mc; 159.87; 159.75; 159.51 mc.
Callicoon, N. Y	KEA448	TB, 160.05 mc.
Cameron, N. Y	KEA666	Do.
Campbell Hall, N. Y	KEA495	Do.
Cuba, N. Y	KEA752	Do.
Deposit (1.5 miles south), N. Y	KEA671	Do.
Endicott, N. Y	KEA493	Do.
Falconer, N. Y	KEA621	Do.
Fillmore (2 miles southeast), N. Y	KEA756	Do.
Friendship, N. Y	KEA780	Do.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Erie—Continued		
Garwoods, N. Y	KEA753	TB, 160.05 mc.
Gulf Summit, N. Y	KEA487	Do.
Hancock, N. Y	KEA808	Do.
Hankins, N. Y	KEA561	Do.
Hornell, N. Y	KEA442	Do.
Horseheads, N. Y	KEA494	Do.
Kirkwood, N. Y	KEA491	Do.
Long Eddy, N. Y	KEA667	Do.
Lordville (1.3 miles west), N. Y	KEA668	Do.
Nartowsburg, N. Y	KEA669	Do.
Newburgh Junction, N. Y	KEA447	Do.
Olean, N. Y	KEA755	Do.
Owego, N. Y	KEA492	Do.
Painted Post, N. Y	KEA486	Do.
Port Jervis, N. Y	KEA441	Do.
Randolph, N. Y	KEA482	Do.
Rathbone (milepost 304.7), N. Y	KEA670	Do.
River Junction, N. Y	KEA445	TB, 160.05 mc.
Sloatsburg, N. Y	KEA485	Do.
Waverly, N. Y	KEA453	Do.
Wellsville, N. Y	KEA446	Do.
West Salamanca, N. Y	KEA420	Do.
Leavittsburg, Ohio	KQA630	Do.
Marion, Ohio	KQA864	TB, 159.87; 160.05 mc.
McGuffey, Ohio	KQB951	TB, 160.05 mc.
Ontario, Ohio	KQA627	Do.
Polk, Ohio	KQA628	Do.
Silver Creek, Ohio	KQA517	Do.
Spencerville, Ohio	KQB950	Do.
Tallmadge, Ohio	KQA629	Do.
Youngstown, Ohio	KQA201	TB, 160.05; 159.87; 159.75; 159.51 mc.
Akron, Ind	KSB872	TB, 160.05 mc.
Boone Grove, Ind	KSB870	Do.
Decatur, Ind	KSB930	Do.
Hammond, Ind	KSC570	TB, 159.87; 160.05 mc.
Monterey, Ind	KSB871	TB, 160.05 mc.
Simpson, Ind	KSB929	Do.
Cambridge Springs, Pa	KGA463	Do.
Corry, Pa	KGA464	Do.
Mast Hope, Pa	KGA440	Do.
Meadville, Pa	KGA462	Do.
Parkers Glen, Pa	KGB789	TB, 160.05 mc.
Pymatuning, Pa	KGA461	Do.
Shohola, Pa	KGA441	Do.
Susquehanna, Pa	KGA350	Do.
Temporary Location	KEB589	TB, 159.87; 160.05 mc.
Do	KEB590	Do.
Mobile	KA2761	Train, 342 units, 159.87; 160.05 mc.
Chicago, Ill	KSA947	YTB, 160.05 mc.
Falconer, N. Y	KEA890	YTB, 159.75 mc.
Hammond, Ind	KSA407	YTB, 160.05; 159.87 mc.
Marion, Ohio	KQC797	YTB, 159.75; 159.87 mc.
Jersey City, N. J	KEA889	YTB, 159.51 mc.
Sharon, Pa	KGC254	YTB, 159.75; 159.87; 160.05 mc.
Mobile	KA5419	Y&T, 83 units, 159.51; 159.75; 159.87; 160.05 mc.
Fort Worth and Denver City: Mobile	KA5714	Train, 55 units, 159.69 mc.
Florida East Coast:		
Miami, Fla	KIB753	YTB, 160.11 mc.
Mobile	KA5718	Y&T, 19 units, 160.11 mc.
Galveston Wharves:		
Galveston, Tex	KKF252	YTB, 160.83 mc.
Mobile	KA8907	Y&T, 20 units, 160.83 mc.
Georgia Northern:		
Albany, Ga	KIC937	TB, 160.05 mc.
Sylvester, Ga	KIC974	Do.
Doerun, Ga	KIC977	TB, 160.05 mc., 161.01 mc.
Pavo, Ga	KIC978	Do.
Ashburn, Ga	KIA396	Do.
Camilla, Ga	KIA274	Do.
Moultrie, Ga	KIA395	Do.
Mobile	KA7818	Train, 5 units, 160.05; 161.01 mc.
Grand Trunk Radio Communications, Inc.:		
Chicago, Ill	KSB367	TB, 160.95 mc.
Harvey, Ill	KSB368	Do.
Detroit, Mich	KQB345	Do.
Mobile	KA8363	Train, 28 units, 160.95 mc.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Great Northern:		
Brookston, Minn	KAF379	TB, 160.65 mc.
Canisteo, Minn	KAF380	Do.
Kelly Lake, Minn	KAF381	Do.
Swan River, Minn	KAF382	Do.
Saunders, Wis	KSC962	TB (2), 160.65 mc.
Mobile	KC2215	Train, 100 units, 160.65 mc.
Minneapolis, Minn	KAB215	YTB, 159.93 mc.
Mobile	KA5674	Y&T, 35 units, 159.93 mc.
Green Bay & Western:		
Green Bay, Wis	KSC289	TB, 161.25 mc.
Mobile	KA7562	Train, 20 units, 161.25 mc.
Gulf, Mobile & Ohio:		
East St. Louis, Ill	KSB331	TB, 161.73 mc.
Temporary location	KIF453	Do.
Do	KIF454	Do.
Mobile	KA2844	Train, 70 units, 160.11; 161.73 mc.
Mobile, Ala	KIB546	YTB, 161.73 mc.
Tuscaloosa, Ala	KIF858	Do.
Meridian, Miss	KKC248	Do.
Jackson, Tenn	KIG546	Do.
Madison County, Tenn	KIG547	Do.
Mobile	KA5119	Y&T, 11 units, 159.03 mc.
Illinois Central:		
Chicago, Ill	KSB627	TB, 161.19 mc.
Harvey, Ill	KSB750	YTB, 160.89 mc.
Hazel Crest, Ill	KSB628	YTB, 160.77 mc.
Jefferson Parish (Mays Yard), La	KKA964	YTB, 160.59 mc.
Mobile	KA3919	Y&T, 34 units, 161.37; 161.73; 160.89; 160.59; 160.77; 161.19 mc.
Jacksonville Terminal Co.:		
Jacksonville, Fla	KIB949	YTB, 161.55; 161.61 mc.
Do	KIB764	Do.
Mobile	KA8024	Y&T, 14 units, 161.55; 161.61 mc.
Kansas, Oklahoma & Gulf: Mobile	KA7800	Train, 20 units, 160.41 mc.
Lake Terminal:		
Lorain, Ohio	KQA464	YTB, 161.73 mc.
Mobile	KA3504	Y&T, 25 units, 161.73 mc.
Lehigh Valley:		
Jersey City, N. J	KEA904	YTB, (2 transmitters), 159.69 mc.
Mobile	KA5579	Y&T, 10 units, 159.69 mc.
Los Angeles Junction:		
Los Angeles, Calif	KMA921	YTB, 161.13 mc.
Mobile	KA2317	Y&T, 9 units, 161.13 mc.
Louisiana & North West:		
Emerson, Ark	KKA247	TB, 160.05 mc.
Magnolia, Ark	KKA244	Do.
McNeil, Ark	KKA245	Do.
Athens, La	KKA248	Do.
Gibsland, La	KKA250	Do.
Haynesville, La	KKA246	Do.
Homer, La	KKA249	Do.
Mobile	KA2161	Train, 3 units, 160.05 mc.
Louisville and Nashville:		
Birmingham, Ala	KIF528	YTB, 161.55 mc.
De Coursey, Ky	KIC412	Do.
Louisville, Ky	KIF678	Do.
Mobile	KA6870	Y&T, 32 units, 161.55 mc.
Manitou & Pike's Peak:		
Pike's Peak, Colo	KAD957	TB, 161.55 mc.
Manitou Springs, Colo	KAD958	Do.
Mobile	KB8366	Train, 6 units, 161.55 mc.
Maryland & Pennsylvania:		
Delta, Pa	KGA326	TB, 161.67 mc.
Mobile	KA4319	Train, 10 units, 161.67 mc.
McKeesport Connecting:		
McKeesport, Pa	KGA356	YTB, 161.73 mc.
Mobile	KA3755	Y&T, 8 units, 161.73 mc.
Minnesota, Dakota, & Western:		
International Falls, Minn	KAA352	YTB, 160.41 mc.
Mobile	KA2836	Y&T, 6 units, 160.41 mc.
Missouri-Kansas-Texas: Mobile	KA5752	Train, 100 units, 160.11 mc.
Missouri-Kansas-Texas of Texas:		
Dallas, Tex	KKB998	YTB, 159.93 mc.
Houston, Tex	KKI409	YTB, 160.29 mc.
Mobile	KA5751	Y&T, 17 units, 159.93 mc.
Missouri Pacific:		
Eads, Colo	KAD404	TB, 160,41; 160.47 mc.
Haswell, Colo	KAE978	Do.
Nepesta, Colo	KAE977	Do.
Ordway, Colo	KAE975	Do.
Pueblo, Colo	KAE976	Do.
Sheridan Lake, Colo	KAE979	Do.
Dupo, Ill	KSC798	Do.
Brownell, Kans	KAE980	Do.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Missouri Pacific—Continued		
Coffeyville, Kans	KAB876	TB, 160.41 mc.
Geneseo, Kans	KAD405	TB, 160.41; 160.47 mc.
Healy, Kans	KAE982	Do.
Hoisington, Kans	KAD400	Do.
Horace, Kans	KAD403	Do.
La Crosse, Kans	KAF206	Do.
Lodi, Kans	KAD402	Do.
Marquette, Kans	KAE981	Do.
Osawatomie, Kans	KAB877	TB, 160.41 mc.
Scott City, Kans	KAD401	TB, 160.41; 160.47 mc.
Utica, Kans	KAE983	Do.
Alexandria, La	KKH982	Do.
De Quincy, La	KK1682	Do.
Blackwater, Mo	KAE933	Do.
California, Mo	KAB727	TB, 160.41 mc.
Jefferson City, Mo	KAB729	Do.
Kansas City, Mo	KAE843	Do.
Pleasant Hill, Mo	KAE936	TB, 160.41; 160.47 mc.
Sandy Hook, Mo	KAE934	Do.
Sedalia, Mo	KAB726	TB, 160.41 mc.
St. Louis, Mo	KAE935	TB, 160.41; 160.47 mc.
Tipton, Mo	KAB728	TB, 160.41 mc.
Warrensburg, Mo	KAE934	TB, 160.41; 160.47 mc.
Houston, Tex	KKH543	TB, 160.41 mc.
Kingsville, Tex	KK1681	TB, 160.41; 160.47 mc.
Palestine, Tex	KK1680	Do.
San Antonio, Tex	KK1679	Do.
Mobile	KA5594	Train, 1,969 units, 160.41 mc.
Kansas City, Mo	KAA584	YTB, 161.49 mc.
Mobile	KA3975	Y&T, 30 units, 161.49 mc.
Modesto & Empire Traction:		
Modesto, Calif	KMD260	YTB, 161.25 mc.
Mobile	KA9560	Y&T, 4 units, 161.25 mc.
Monessen Southwestern:		
Monessen, Pa	KGA572	YTB, 160.11 mc.
Mobile	KA4792	Y&T, 15 units, 160.11 mc.
Monongahela Connecting:		
Pittsburgh, Pa	KGA332	YTB, 159.51 mc.
Mobile	KA2415	Y&T, 12 units, 159.51 mc.
Newburgh & South Shore:		
Cleveland, Ohio	KQC467	YTB, 160.89 mc.
Mobile	KA9195	Y&T, 5 units, 160.89 mc.
New Orleans & Lower Coast:		
Algiers, La	KKH898	TB, 161.07 mc.
Belle Chasse, La	KKG971	TB, 161.07 mc.
Mobile	KA9258	Train, 20 units, 161.07 mc.
New Orleans Terminal Co.:		
New Orleans, La	KKA568	YTB, 161.49 mc.
Mobile	KA2907	Y&T, 12 units, 161.49 mc.
New York Central:		
Harrisburg, Ill	KSA858	TB, 161.67 mc.
Mobile	KA9755	Train, 201 units, 161.07 mc.
Hammond, Ind	KSA277	YTB, 161.13 mc.
Weehawken, N. J	KEA899	YTB, 161.67 mc.
Albany, N. Y	KEA363	YTB, 160.89 mc.
Bethlehem Township, N. Y	KEA901	YTB, 160.41 mc.
Buffalo, N. Y	KEA365	YTB, 160.89 mc.
Do	KEA373	YTB, 161.61 mc.
Cheektowaga Township, N. Y	KEA900	YTB, 160.41 mc.
Manlius Township, N. Y	KEA896	YTB, 160.89 mc.
Do	KEA367	YTB, 161.61; 160.89 mc.
New York, N. Y	KEA376	YTB, 160.17 mc.
Do	KEA375	YTB, 160.41 mc.
Rensselaer, N. Y	KEA364	YTB, 160.17 mc.
Rochester, N. Y	KEA374	YTB, 161.61 mc.
Toledo, Ohio	KQA867	YTB, 160.17 mc.
Do	KQA868	YTB, 160.89 mc.
Mobile	KA2467	Y&T, 201 units, all above frequencies.
New York, Chicago & St. Louis:		
Chicago, Ill	KSA223	TB, 161.25 mc.
Coffeen, Ill	KSA227	Do.
Madison, Ill	KSA225	Do.
South Gary, Ind	KSA226	Do.
Angola, N. Y	KEA229	Do.
Buffalo, N. Y	KEA228	Do.
Dunkirk, N. Y	KED219	Do.
Ripley, N. Y	KEC953	Do.
Ashtabula, Ohio	KQD358	Do.
Avery, Ohio	KQD356	Do.
Bellevue, Ohio	KQD357	Do.
Cleveland, Ohio	KQA246	Do.
Conneaut, Ohio	KQD354	Do.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
New York, Chicago & St. Louis—Con.		
Lorain, Ohio	KQA244	TB, 161.25 mc.
Painesville, Ohio	KQD355	Do.
Toledo, Ohio	KQA243	Do.
Erie, Pa	KGC436	Do.
Mobile	KA2210	Train, 262 units, 161.25 mc.
Madison, Ill	KSA224	YTB, 160.17 mc.
Buffalo, N. Y	KEA891	YTB, 161.49 mc.
Cleveland, Ohio	KQA245	Do.
Do	KQC640	YTB, 161.01 mc.
Do	KQC641	Do.
Toledo, Ohio	KQA242	YTB, 161.49 mc.
Mobile	KA2202	Y&T, 123 units, 161.25; 161.49; 160.17 mc.
New York Dock Ry.:		
Brooklyn, N. Y	KEC873	YTB, 161.19 mc.
Mobile	KEC873	Y&T, 12 units, 161.19 mc.
New York, New Haven & Hartford:		
Mobile	KA9188	Train (developmental), 1 unit, 2,455 mc.
Hartford, Conn	KCA269	YTB, 161.55 mc.
New Haven, Conn	KCC371	Do.
North Haven, Conn	KCC372	YTB, 161.13 mc.
Do	KCC373	YTB, 160.83 mc.
Bronx, N. Y	KEC314	YTB, 161.49 mc.
Pawtucket, R. I	KCC330	YTB, 161.55 mc.
Mobile	KA5572	Y&T, 52 units, 161.49; 161.55 mc.
Niagara Junction:		
Niagara Falls, N. Y	KEA231	YTB, 160.59 mc.
Mobile	KA2218	Y&T, 13 units, 160.59 mc.
Northeast Oklahoma:		
Baxter, Kans	KAD480	TB, 159.75 mc.
Columbus, Kans	KAD481	Do.
Miami, Okla	KKG515	Do.
Do	KKG516	Do.
Mobile	KA9643	Train, 24 units, 159.75 mc.
Northern Pacific:		
St. Paul, Minn	KAA996	TB, 161.25 mc.
Auburn, Wash	KOA210	TB, 161.01; 161.25 mc.
Yakima, Wash	KOA223	Do.
Stampede, Wash	KOF494	Do.
Glendive (3 miles east), Mont	KOE317	Do.
Berea, N. Dak	KAD718	Do.
Bismarck, N. Dak	KAD711	Do.
Bloom, N. Dak	KAD716	Do.
Buffalo, N. Dak	KAD720	Do.
Cleveland, N. Dak	KAD715	Do.
Dawson, N. Dak	KAD714	Do.
Dickinson, N. Dak	KAD710	Do.
Driscoll, N. Dak	KAD713	Do.
Fargo, N. Dak	KAD721	Do.
McKenzie, N. Dak	KAD712	Do.
Peak, N. Dak	KAD719	Do.
Sanborn, N. Dak	KAD717	Do.
Mobile	KA5604	Train, 126 units, 161.01; 161.25 mc.
Seattle, Wash	KOA980	YTB, 161.13 mc.
Mobile	KA5605	Y&T, 7 units, 161.13 mc.
North Louisiana & Gulf:		
Gibsland, La	KKF375	TB, 159.69 mc.
Hodge, La	KKF374	Do.
Mobile	KA7901	Train, 5 units, 159.69 mc.
Ogden Union Railway & Depot Co.:		
Ogden, Utah	KOE943	YTB, 159.87; 160.11; 160.23; 160.59; 160.71; 160.95; 161.19 mc.
Mobile	KOE943	Y&T, 12 units, 161.19 mc.
Pacific Electric:		
Los Angeles, Calif	KMB437	YTB, 159,51; 159.63; 159.81 mc.
Mobile	KA7563	Y&T, 67 units, 159.51; 159.63; 159.81 mc.
Pecos Valley Southern:		
Hoban, Tex	KKI527	TB, 159.69 mc.
Pecos, Tex	KKI528	Do.
Mobile	KB9874	Train, 8 units, 159.69 mc.
Pennsylvania:		
York, Pa	KGB369	TB, 160.71 mc.
Washington, D. C	KGB372	Do.
Morrisville, Pa	KGC421	Do
Wilkes Barre, Pa	KGB412	Do.
Ridgeway, Pa	KGA246	Do.
Mobile	KA7105	Train, 105 units, 160.71 mc.
Pittsburgh & Ohio Valley:		
Pittsburgh, Pa	KGA200	YTB, 160.11 mc.
Mobile	KGA200	Y&T, 5 units, 160.11 mc.
Point Comfort & Northern:		
Lolita, Tex	KKC395	TB, 160.05 mc.
Port La Vaca, Tex	KKC394	Do.
Mobile	KA5574	Train, 2 units, 160.05 mc.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Richmond, Fredericksburg & Potomac:		
Alexandria, Va	KIE381	TB, 161.55; 161.67 mc.
Cherry Hill, Va	KIC690	Do.
Franconia, Va	KIC689	Do.
Hunton, Va	KIC688	Do.
Ruther Glen, Va	KIC692	Do.
Richmond, Va	KIE380	Do.
Summit, Va	KIC691	Do.
Mobile	KA7495	Train, 55 units, 161.55; 161.67 mc.
Alexandria, Va	WFSB	YTB, 161.13; 161.49 mc.
Do	WFXN	Do.
Mobile	KA5896	Y&T, 18 units, 161.13; 161.49 mc.
River Terminal:		
Cleveland, Ohio	WBZX	YTB, 161.61 mc.
Mobile	KA3283	Y&T, 9 units, 161.61 mc.
Sand Springs Railway Co.:		
Sand Springs, Okla	KKG365	TB, 160.23 mc.
Tulsa, Okla	KKG364	Do.
Mobile	KA9279	Train, 20 units, 160.23 mc.
St. Louis-San Francisco:		
St. Louis, Mo	KAB685	TB, 161.13 mc.
Tulsa, Okla	KKC585	Do.
Mobile	KA3650	Train, 105 units, 161.13 mc.
Kansas City, Mo	KAE876	YTB, 161.13 mc.
Do	KAE875	Do.
Springfield, Mo	KAA251	Do.
Ewing Ave. yard, St. Louis, Mo	KAB892	YTB, 159.87 mc.
Lindenwood yard, St. Louis, Mo	KAB893	YTB, 159.75 mc.
Do	KAB894	YTB, 160.83 mc.
Memphis, Tenn	KIF239	YTB, 161.13 mc.
Oklahoma City, Okla	KKG742	Do.
Mobile	KA8119	Y&T, 9 units, 159.75; 159.87; 160.83 mc.
St. Louis-San Francisco & Texas:		
Ft. Worth, Tex	KKB557	YTB, 161.13 mc.
Mobile	KA4531	Y&T, 2 units, 161.13 mc.
St. Louis Southwestern: Mobile	KB6839	Train 20 units, 160.89 mc.
Santa Maria Valley:		
Santa Maria, Calif	KMB618	TB, 160.77 mc.
Mobile	KA8352	Train, 9 units, 160.77 mc.
Seaboard Air Line:		
Mobile	KA5694	Train, 12 units, 159.69; 159.81; 160.05; 160.17; 160.89 mc.
Birmingham, Ala	KIE882	YTB, 159.69; 160.17 mc.
Jacksonville, Fla	KIG269	YTB, 160.89 mc.
Miami, Fla	KIA273	YTB, 159.69; 160.89 mc.
Tampa, Fla	KIB739	YTB, 160.17; 159.69 mc.
Do	KIB740	Do.
Do	KIE387	YTB, 160.89 mc.
Atlanta, Ga	KIB737	YTB, 160.17; 159.69 mc.
Savannah, Ga	KIB744	Do.
Do	KIG232	YTB, 160.89 mc.
Hamlet, N. C	KIB743	YTB, 160.17; 159.69 mc.
Do	KIB738	Do.
Richmond, Va	KIB742	Do.
Do	KIB741	Do.
Mobile	KA2227	Y&T, 124 units, 160.17; 159.69; 160.89 mc.
South Buffalo:		
Buffalo, N. Y	KEB704	TB, 159.57 mc.
Hamburg Township, N. Y	KEB701	Do.
Hamburg, N. Y	KEB700	Do.
Lackawanna, N. Y	KEB703	Do.
Do	KEB702	Do.
Mobile	KA7920	Train, 26 units, 159.57 mc.
Southern Pacific:		
Bakersfield, Calif	KMC202	TB, 161.55 [1]; 161.79 mc.
Colfax, Calif	KMD605	TB, 161.55 [1]; 161.79 mc.
Emigrant Gap, Calif	KMC607	TB, 160.29 [1]; 161.55 [1]; 161.79 mc.
Glendale, Calif	KMB892	TB, 161.55 [1]; 161.79 mc
Los Angeles, Calif	KMC992	TB, 161.55 [1]; 161.79 mc.
Mojave, Calif	KMD697	TB, 161.55 [1]; 161.79 mc.
Norden, Calif	KMD609	TB, 160.29 [1]; 161.55 [1]; 161.79 mc.
Truckee, Calif	KMD611	TB, 160.29 [1]; 161.55 [1]; 161.79 mc.
Carter, Oreg	KOE241	TB, 161.55 [1]; 161.79 mc.
Cascade Summit, Oreg	KOE234	TB, 161.55 [1]; 161.79 mc.
Crescent Lake, Oreg	KOE244	TB, 161.55 [1]; 161.79 mc.
Cruzette, Oreg	KOE235	TB, 161.55 [1]; 161.79 mc.
Eugene, Oreg	KOE243	TB, 161.55 [1]; 161.79 mc.
Fields, Oreg	KOE236	TB, 161.55 [1]; 161.79 mc.
McCreedie Springs, Oreg	KOE238	TB, 161.55 [1]; 161.79 mc.
Oakridge, Oreg	KOE239	TB, 161.55 [1]; 161.79 mc.

[1] Y&T operation only.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Southern Pacific:—Continued		
Springfield, Oreg	KOE242	TB, 161.55 [1]; 161.79 mc.
Westfir, Oreg	KOE240	TB, 161.55 [1]; 161.79 mc.
Micopee, Oreg	KOE237	TB, 161.55 [1]; 161.79 mc.
Mobile	KA5121	Train, 441 units, 161.43 [1]; 161.55 [1]; 161.67 [1]; 161.79 mc.
Phoenix, Ariz	KOB600	YTB, 160.89; 161.55 mc.
Tucson, Ariz	KOA784	YTB, 161.43; 161.55 mc.
Do	KOA785	YTB, 161.43; 161.67 mc.
Do	KOA786	Do.
Yuma, Ariz	KOB599	YTB, 161.43; 161.55 mc.
Do	KOF360	YTB, 161.43; 161.67 mc.
Do	KOF361	Do.
Fresno, Calif	KMA815	YTB, 160.89; 161.43; 161.55 mc.
Gerber, Calif	KMA816	YTB, 161.55; 161.67 mc.
Los Angeles, Calif	KMA796	Do.
Do	KMA812	YTB, 161.55; 161.61; 161.67 mc.
Do	KMA813	YTB, 160.89; 161.55; 161.43 mc.
Do	KMD886	YTB, 159.51; 159.57; 159.63; 159.69; 161.55 mc.
Roseville, Calif	KMD449	YTB, 160.89; 161.55; 161.43; 161.67 mc.
Do	KMA817	YTB, 161.43; 161.55; 160.89; 161.67 mc.
Do	KMD769	YTB, 161.43; 161.55; 161.67 mc.
Do	KMD768	YTB, 160.41; 160.89; 160.95; 161.79; 161.55 mc.
Bakersfield, Calif	KMB464	YTB, 160.89; 161.55; 161.67 mc.
Oakland, Calif	KMB465	YTB, 160.89; 161.55; 161.67; 160.41; 161.79 mc.
Sacramento, Calif	KMD943	YTB, 161. 55; 161.61; 161.79 mc.
Salinas, Calif	KMA516	YTB, 160.89 mc.
Do	KMB891	YTB, 160.89; 161.43; 161.55; 161.67 mc.
San Francisco, Calif	KMA243	YTB, 161.61 mc.
Stockton, Calif	KME215	YTB, 161.55; 161.79 mc.
Tracy, Calif	KMD696	YTB, 161.43; 161.55 mc.
Eugene, Oreg	KOB601	Do.
Klamath Falls, Oreg	KOC474	YTB, 161.43; 161.55; 161.67 mc.
Portland, Oreg	KOB602	YTB, 161.43; 161.55 mc.
Mobile	KA2342	Y&T, 493 units, 160.89; 159.75; 160.29; 161.43; 161.55; 161.67 mc.
West Oakland, Calif	KMD859	YTB, mobile relay, 160.23 mc.
Mobile	KMD859	Y&T, 12 units, 161.67 mc.
Southern:		
Temporary location	KIC816	Train (developmental), base, 2455 mc.
Do	KIC817	Do.
Do	KIC818	Do.
Near Harrodsburg, Ky	KIF983	TB, developmental, 160.95 mc.
Mobile	KA5685	Train, 1125 units, 160.95; 161.49 mc.
Birmingham, Ala	KIA283	YTB, 161.49 mc.
Atlanta, Ga	KIB707	Do.
Asheville, N. C	KIF987	Y&T, mobile relay, 161.25 mc.
Do	KIF988	Do.
Knoxville, Tenn	KIB680	YTB, 160.29; 160.75 mc.
Do	KIB679	YTB, 160.29 mc.
Mobile	KA2875	Y&T, 298 units, 160.29; 160.47; 160.53; 160.65; 161.07; 161.25; 161.49 mc.
Atlanta, Ga	KIB682	Developmental, base, 161.07 mc.
Do	KIB683	Developmental, base, 160.89 mc.
Mobile	KA5477	Developmental, 25 units, 160.47; 160.53 mc.
Atlanta, Ga	KIA470	Y&T, mobile relay, 161.07 mc.
Do	KIA 471	Y&T, mobile relay, 160.89 mc.
Charlotte, N. C	KIF325	Y&T, mobile relay, 160.29 mc.
Knoxville, Tenn. (2)	KIF306	Y&T, mobile relay, 160.65; 161.25 mc.
Spokane, Portland & Seattle:		
Temporary location	KOE249	TB, 161.61 mc.
Do	KOE250	Do.
Do	KOE251	Do.
Mobile	KA9689	Train, 125 units, 161.61 mc.
Steelton & Highspire:		
Steelton, Pa	KGA256	YTB, 161.19 mc.
Mobile	KA2398	Y&T, 25 units, 161.19 mc.
Terminal Ry., Alabama State docks:		
Mobile, Ala	KIF976	YTB, 159.75 mc.
Mobile	KIF976	Y&T, 30 units.
Texas and Pacific:		
Baird, Tex	KKI222	TB, 160.41 mc.
Mobile	KA4895	Train, 200 units, 160.41 mc.
Texas & New Orleans:		
Avondale, Iowa	KKD410	YTB, 160.29 mc.
El Paso, Tex	KKE939	YTB, (7) 160.29; 160.77; 160.89; 159.99; 161.55 mc.
Do	KKG918	YTB, (2) 160.89; 161.55 mc.

[1] Y & T operation only.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Texas & New Orleans—Continued		
Houston, Tex	KKI376	YTB, (4) 160.23; 160.77; 160.89; 161.55 mc.
Mobile	KA6916	Y&T, 50 units, 160.29; 159.99; 160.77; 160.89; 161.55; 160.23 mc.
Texas & Northern:		
Lone Star, Tex	KKD567	YTB, 159.63 mc.
Mobile	KA7246	Y&T, 15 units, 159.63 mc.
Texas Mexican:		
Corpus Christi, Tex	KKG458	YTB, 161.13 mc.
Laredo, Tex	KKG457	Do.
Mobile	KA9536	Y&T, 20 units, 161.13 mc.
Texas, Oklahoma & Eastern:		
Broken Bow, Okla	KKF846	TB, 160.23 mc.
Valliant, Okla	KKF844	Do.
Wright City, Okla	KKF845	Do.
Texas City Terminal:		
Texas City, Tex	KKD868	YTB, 159.63 mc.
Mobile	KKD868	Y&T, 6 units, 159.63 mc.
Toledo, Peoria & Western:		
East Peoria, Ill	KSC740	TB, 159.93 mc.
Mobile	KA9162	Train, 114 units, 159.93 mc.
Toledo Terminal:		
Toledo, Ohio	WECH	YTB, 159.99 mc.
Mobile	WECN	Y&T, 15 units, 159.99 mc.
Union Pacific:		
Los Angeles, Calif	KMA452	TB, 159.93; 160.17 mc.
Pomona, Calif	KMA446	Do.
Riverside, Calif	KMA447	Do.
Emmett, Kans	KAF268	Do.
Do	KAF398	TB, 160.05 mc.
Frankfort, Kans	KAF400	Do.
Do	KRCR	TB, 159.93; 160.17 mc.
Kansas City, Kans	KAF270	TB, 159.93 mc.
Do	KAF401	TB, 160.05 mc.
Lawrence, Kans	KAF399	Do.
Do	KAF271	TB, 159.93; 160.17 mc.
Marysville, Kans	KAF272	Do.
Do	KAF397	TB, 160.05 mc.
Menoken, Kans	KRBN	TB, 159.93; 160.17 mc.
Omaga, Kans	KRBV	Do.
Portland, Oreg	KOF498	TB, 160.05 mc.
Do	KOF353	TB, 159.93; 160.17 mc
East Riverton, Wash	KOF504	TB, 160.05 mc.
Seattle, Wash	KOA200	TB, 159.93; 160.17 mc.
Tacoma, Wash	KOA221	TB, 159.93 mc.
Do	KOF503	TB, 160.05 mc.
Mobile	KA2337	Train, 51 units, 159.93; 160.05; 160.17 mc.
Los Angeles, Calif	KMA234	YTB, 160.29 mc.
Do	KME328	YTB, 160.23 mc.
Denver, Colo	KAF275	YTB, 160.29 mc.
Do	KAD577	YTB, 160.23 mc.
Pocatello, Idaho	KOA976	YTB, 160.29 mc.
Do	KOA975	YTB, 160.41 mc.
Council Bluffs, Iowa	KAD578	YTB, 160.23 mc.
Kansas City, Kans	KAD576	Do.
Do	KAA956	YTB, 160.29 mc.
North Platte, Nebr	KAF274	Do.
Do	KAF273	YTB, 160.41 mc.
Do	KAB865	TB, 160.29 mc.
Omaha, Nebr	KRDE	Do.
Las Vegas, Nev	KOB630	TB, 160.17; 160.29 mc.
Hinkle, Oreg	KOF995	TB, 160.29 mc.
Portland, Oreg	KOF352	Do.
Salt Lake City, Utah	KOF814	TB, 160.23 mc.
Do	KOA243	TB, 160.29 mc.
Seattle, Wash	KOA201	Do.
Tacoma, Wash	KOB646	Do.
Cheyenne, Wyo	KOF321	TB, 160.23 mc.
Granite Canyon, Wyo	KOE919	TB, 160.41 mc.
Green River, Wyo	KOF304	TB, 160.23 mc.
Mobile	KA2338	Y&T, 160 units, 159.87; 160.11; 160.53; 160.59; 160.65; 160.71; 160.77; 160.83; 160.95; 160.29; 160.41 mc.
Union (Pittsburgh):		
Clairton, Pa	KGB375	YTB, 159.87 mc.
Rankin, Pa	KGA849	Do.
Mobile	KA5668	Y&T, 25 units, 159.87 mc.
Upper Merion and Plymouth:		
Swedeland, Pa	KGB828	YTB, 159.51 mc.
Mobile	KA9490	Y&T, 12 units, 159.51 mc.
Walla Walla Valley:		
Walla Walla, Wash	KOB249	TB, 161.13 mc.
Milton, Oreg	KOB250	Do.
Mobile	KA6160	Train, 4 units, 161.13 mc.

Railroad radio authorizations, Jan. 1, 1953—Continued

Railroad and transmitter location	Call sign	Nature of authorization
Washington & Old Dominion:		
Bluemount Junction, Va	KIC953	TB, 159.57 mc.
Herndon, Va	KIC950	Do.
Leesburg, Va	KIC952	Do.
Vienna, Va	KIC951	Do.
Mobile	KA8066	Train, 5 units, 159.57 mc.
Western Maryland:		
Baltimore, Md	KQA850	TB, 159.69; 159.81 mc.
Mobile	KA5678	Y&T, 6 units, 159.69 mc.
Western Pacific:		
Temporary location	KMA417	TB, 159.63 mc.
Mobile	KA3502	Train, 25 units, 159.63 mc.
Oakland, Calif	KMA418	YTB, 159.63 mc.
Oroville, Calif	KMD382	YTB, 160.05 mc.
Portola, Calif	KMD385	Do.
Sacramento, Calif	KMD383	Do.
San Francisco, Calif	KMD380	Do.
San Jose, Calif	KMD380	Do.
Stockton, Calif	KMD381	Do.
Elko, Nev	KOE264	Do.
Mobile	KA3503	Y&T, 196 units, 159.63 mc.
Western Railway of Alabama:		
Montgomery, Ala	KIF238	YTB, 161.43 mc.
Mobile	KA9640	Train, 24 units, 161.67 mc.
West Virginia Northern:		
Kingwood, W. Va	KQA346	TB, 161.25 mc.
Mobile	KA2418	Train, 2 units, 161.25 mc.
Wyandotte Southern:		
Wyandotte, Mich	KQC546	YTB, 160.65 mc.
Mobile	KA9547	Y&T, 2 units, 160.65 mc.

Legend: TB—Train base station; YTB—Yard-terminal base station; mc—megacycles.

Mr. STINE. As I have already said, the fact with respect to radio in train operation is that at present it affords at best only a supplementary device and can in no sense be regarded as a substitute for other existing means of train protection and operation. The railroads are devoting their initiative and ingenuity to the adaptation and use of radio communication, as is evidenced by the tabulations I have submitted for the record. It is my belief that injection of governmental compulsion would be calculated to retard rather than to accelerate progress in this field.

With respect to telegraph and telephone installations, it is difficult indeed to perceive any reason why it should be proposed at this late date to impose Government control. Use of the telegraph for purposes of wayside communication has been part and parcel of railroad operation from the beginning and the telephone has likewise been constantly utilized since its advent. For many years telegraph and telephone were the only methods available for rapid wayside communication, and yet it has never been deemed necessary to vest the Commission with authority to require their installation by the railroads or to control their adaptation to changing conditions. I believe your committee will agree that sound policy calls for limitation of administrative regulatory powers in the field of operation to those for which a real and present need is clearly demonstrated. Certainly there has been no such demonstration as regards telephone and telegraph installation.

The block-signal system, interlocking, automatic train stop, train control and cab signal devices described in section 25 of the Signal Inspection Act are devices used to govern the operation of trains.

Telegraph, telephone, radio, inductive, or other wayside and/or train communcation systems do not in our opinion fall within the same cate-

gory, being used merely as means of communication. Rules governing the operation of trains make the necessary provisions to safeguard train movements in case of failure of means of communication.

For this reason we believe that the inclusion of railroad communicating systems in this law is neither necessary nor proper and that governmental control of such systems would not afford an additional contribution to safety of operation.

Changing conditions encountered in the operation of railroads throughout the United States arising from seasonal changes in the movement of traffic and emergency conditions such as floods and blizzards often require immediate alteration in the setup of telephone and telegraph communications. Any legislation looking to a requirement of approval by the Commission of such changes and alterations would therefore operate against, rather than facilitate, safe and efficient operation.

In a word, then, the railroads oppose that feature of S. 539 which would grant to the Interstate Commerce Commission authority to control and supervise the railroads in respect of utilization of radio, inductive, telegraph, telephone, and other wayside and/or train communication systems.

I shall now address myself to that part of the bill which deals with rules for the operation of trains. As I understand the report made to your committee by the Legislative Committee of the Interstate Commerce Commission with respect to S. 539, the Commission, which is the body to interpret and administer the bill if enacted, considers that it would afford to the Commission far-reaching authority with respect to the establishment and observance of rules for the operation of trains in connection with signaling and communication systems. Since all trains are necessarily operated in connection with signaling or communication systems, it would appear to be the view of the Commission that there would be no limitation upon the scope of its authority. From a practical standpoint, this could mean nothing less than to grant to the Commission authority to operate the railroads.

I know of nothing which would be better calculated to demoralize train operation than a division of authority between railroad management and an administrative governmental establishment such as the Interstate Commerce Commission. Your committee will realize that the safe and expeditious movement of trains lies at the very core of the railroad business. Nowhere is there to be found a body of men to whom safety of operation is a matter of such great concern as the operating officials of the railroads, and nowhere in Government is to be found that degree of intimate knowledge and experience possessed by them. As things stand today, the establishment of the best possible rules for operation, and the enforcement of such rules, is the matter of primary concern to those in charge of the operation of the railroads, and their pride lies in the results which have been obtained under private management. Divided authority in this field, as between management on the one hand and a Government agency on the other, could not fail, human nature being what it is, to result in a sense of divided responsibility.

Nothing, in my judgment, could be more harmful in respect of safe operation than a sense of divided responsibility in the matter. This

I believe to be the fundamental and sufficient reason for refusal on your part to take favorable action with respect to S. 539.

Senator PASTORE. Could you give an example as to your understanding or interpretation of the broadness of this? I am very much interested in that. You present it in such a way that it would seem the ICC would be actually running the railroads or sharing in the responsibility of the operation of the railroads.

Mr. STINE. Commissioner Patterson's testimony, I think, described in a way what is the thought in the matter. The bill would give them authority to not only prescribe the type of operation, but to prescribe rules for the maintenance of the tracks, bridges, in fact, go further than just the matter of the train rules themselves.

I really don't know just how far their authority goes. In his statement he said that the power to establish rules, regulations, and practices to promote safety of train operation carries with it no authority to require the building of bridges or track structure, provide grade-crossing protection, or require changes in clearances. Such power, however, might be invoked to require safe operation over bridges or track structure found insufficient or defective, to require certain protection where clearance conditions are unsafe, and to limit speeds over certain grade-crossings where adequate protection is not provided. Conceivably it could be used to regulate train lengths to the extent that the length of a train becomes an important factor in safety of operation. Assuming the train is properly protected, I cannot conceive how the number of employees on a train could be affected by an operating rule, regulation, or practice designed to promote safe operation.

Senator POTTER. I can't find in the bill, however, where the Commission would get that authority from this bill.

Mr. STINE. I referred, Senator, to a letter which the Commission addressed to your committee under date of March 10. The letter was signed by Commissioner Mahaffie, acting chairman, Committee on Legislation and Rules. In that, Commissioner Mahaffie states as follows:

> We believe the Commission should have jurisdiction to order any rail carrier to install such devices, appliances, methods, and systems where deemed necessary to promote safety and to order the rail carrier to establish maintain, and obesrve rules and regulations for the operation of trains in connection therewith.
>
> If we are given such authority, it would also answer the question which has been raised by some railroads as to the Commission's jurisdiction under the present section 25 of the act to prescribe manual block systems, which systems for the most part consist of operating rules.
>
> The rail carriers have their own operating rules, some of which are related to safety of operation. If the carriers are required to file with the Commission their rules and regulations for the operation of trains in connection with the specified devices, appliances, methods, and systems, we would then be in a position to examine such rules and regulations, look into the question of their adequacy from the standpoint of safety, and determine whether action should be taken with a view to requiring changes or additions.

It was from the language of that letter that I have taken the position that the Commission feels that this bill would grant them unlimited authority over the operations.

Senator POTTER. It is not my understanding of the bill.

Mr. STINE. Did that answer your question?

Senator PASTORE. Yes, and I think that is a very important element here, exactly who is trying to do what. I think it is too broad a field

to have any wide cleavage. Certainly I don't think the ICC should be running the railroads, although I do think they should have some power as to safety devices on trains.

Senator POTTER. I would like to have your counsel go over the bill and where there is language which would give the Commission the authority which Commissioner Patterson indicated, have that pointed out to me.

Mr. STINE. I believe Mr. Preston did that yesterday. I don't know if you were here or not, Senator.

The CHAIRMAN. In the second paragraph, page 2 of your paper, you state that, "Compulsion tends to destroy incentive and retard progress." Is it your view that the ICC in the enforcement of safety laws on the statute books has destroyed incentive and retarded progress?

Mr. STINE. No, I wouldn't make that contention. I am trying to find the reference you had.

The CHAIRMAN. It is the second paragraph, page 2.

Mr. STINE. I have reference there to the compulsion that I think would exist in connection with the installation of radio devices, perhaps, which are not yet fully developed.

The CHAIRMAN. That is a bugaboo you have in mind, something in futuro.

Mr. STINE. I do not know what the Commission has in mind, how they expect to enforce this act if it is passed.

I am, of course, aware that accidents do occur in the operation of trains. I suggest to the committee that neither the enactment of statutes nor any amount of governmental supervision over and interference with train operation will insure against them. Occasional mishaps are inevitable.

Devices aimed toward more safe operation of our railroads which have been adopted accomplish that purpose to the extent that devices can serve the purpose. But no known device is in itself the final answer to the elimination of train accidents. As long as we have the human element to deal with, we must depend upon strict compliance with the rules as our best hope for reaching that desirable end.

In my opinion, strict compliance with the rules can only be accomplished by competent training followed up constantly by careful supervision with wise and judicious disciplinary action when necessary. It certainly cannot be accomplished by governmental compulsion.

The administration of discipline is such a delicate matter, being so closely involved with personalities and human relations, that I cannot conceive of anyone feeling that management should in any measure be relieved of that responsibility. On the other hand, the responsibility for the establishment of a rule and the responsibility for its enforcement are so closely related that they cannot be successfully separated. I do not believe railroad management can be safely relieved of or required to share with a regulatory agency either of those responsibilities.

I have no doubt that the proponents of this legislation in the Commission feel that if this bill is enacted it will give the Commission all of the power it needs to establish all rules for train operation, but I doubt if due consideration has been given to the impact its decisions would have with respect to weakening management's ability to

enforce the rules. The power to establish a rule inevitably carries with it the power of interpretation.

Neither responsibility for establishment of a rule nor the responsibility for the enforcement should be taken away from railroad management. The record of constant improvement which the railroads have made in safety performance over the years argues against now stripping the management of authority which it has been successfully exercising.

The proposal for a division of responsibility in the field of train operation can only be based upon the false and unjust assumption that unless subjected to Government regulation with respect to rules for the operation of trains the railroads would be remiss in the discharge of their obligation to the public and would fail to safeguard trains, operation with all the rules and regulations necessary to insure the maximum attainable degree of safety.

Senator MONRONEY. Mr. Chairman, I can't feel that this committee should be told by these witnesses that any safety regulation removes from management the right to operate railroads. Constantly, we have had this testimony here today.

I would wish to have pointed out what, in the safety rules, would remove from you the right to run your railroads. We have asked you to specify what is objectionable to you in this that would cause you to lose that control.

We find in every other paragraph the mention of safety regulations, minimum inspections, approval of operating rules for, perhaps, overhaul of airbrakes, or that something is unjust and socialistic as to governmental powers. I think we ought to have exactly what you object to in this bill. It would be much more helpful to us.

Mr. STINE. In this proposal comes the matter of the enforcement of the operating rules. It is my feeling that if the Commission is given power to establish those rules, establish the exact wording of the rules, which I feel they would do, if they had the power or had the authority to do so, that it would not be long before they would have to enter into the field of the enforcement of the rules, which is a matter which, in my opinion, can only be accomplished by the management of the railroads who are closely in touch with the day-to-day operation and have the responsibility for the employees who actually are operating under the operating rules.

Senator MONRONEY. We had testimony in this Washington wreck that over a period of considerable time, due to the faulty design of these streamlined cars, we had been having trouble with these angle cocks getting closed. You don't think that the ICC should have any authority whatsoever, if they had a sufficient amount of evidence of this situation occurring, to order those cars out of service until the deficiency could be repaired; would that be a correct statement?

Mr. STINE. They could order the cars out, but you come to the point, somewhere along the line, that someone failed to comply with the rules that are already in existence.

Senator MONRONEY. It must have been known. They had continual squawks from this difficulty, the record shows, and yet they did not comply, apparently, with their own rules, as to the braking of those cars.

Mr. STINE. But it still would remain the management's responsibility to see that the rules were complied with.

Senator MONRONEY. There should be no governmental power whatever; if, in the new design of a train, it proved to be faulty on several occasions, the Government would have no right, in the interest of safety, to rule those cars out of service until the deficiency would be repaired?

Mr. STINE. I think they probably have that right now. I am not too clear on that.

Senator MONRONEY. I understood the purpose of this amendment that they are suggesting is mainly to give them that extra bit of authority, that if, over a period of time, the failure is not corrected, they could take remedial action.

Mr. STINE. My understanding of the purpose of this bill is to give them the authority to establish the rules, the operating rules of the trains.

I think what you are referring to is the maintenance of equipment.

Senator MONRONEY. That is the prime purpose, I understood, of the bill, to enforce the operating rules which, mainly, the railroads already have, but might not live up to, frequent inspections as to keeping the equipment in proper order.

Mr. STINE. Of course, it pertains to the rules relative to the various signal and operating devices.

Senator MONRONEY. That is the radio part of the bill. I am talking about the other part of the bill, on which we have already had an amendment to the braking section.

The principal amendment, as I see it, as I quote it here:

> The Interstate Commerce Commission may, after investigation, if found necessary in the public interest, order any carrier engaged in interstate commerce by railroad to install power or train brakes which comply with specifications and requirements prescribed by the Commission.

Mr. STINE. I was not testifying in connection with the power brake bill. That is S. 1401. I was trying to confine my testimony to S. 539, which is the signal and so-called train rule bill, which may account for my failure to testify in connection with anything in regard to the power brake bill.

Rules governing the safe operation of trains have been in effect and have been observed since the first train was placed in service. The first rules were as meager as the trains they governed, but they were the necessary rules and they have been improved in the light of experience and as the number and speed of the trains increased.

In 1889, or 64 years ago, what is known as the Standard Code of Train Rules was first adopted and issued by a group of the principal railroads of this country, which organization later developed into what is now known as the Association of American Railroads. Since that time, the association has maintained a joint committee charged with the duty of keeping the rules up to date. Railroads of all sections of the country are represented on this committee and each member is a man of many years of service who has risen to his executive position from the ranks, who has been closely connected during his entire career with the operation of trains and has a first-hand knowledge of the details of the operation on his own railroad. The standard code has been amended and revised from time to time, and to date there have been 14 general revisions. In addition, individual rules have been changed between the date of general revisions when changed conditions required it. In other words, the standard code

is under constant revision to keep abreast of improvements in methods of operation as the result of technological developments affecting railroad operations. It lays down the basic principles which are generally followed by all railroads in establishing their own codes of operating rules. The first page of the code states that "where proper safeguards are provided, railroads may modify or add to these rules to suit their requirements." Each railroad, in working out its detailed rules, has, as a practical matter, found it necessary to modify or supplement the rules contained in the standard code to the extent necessary to meet the varied conditions encountered in its own operations.

This is the reason the responsibility for the establishment and enforcement of train rules is such a fundamental part of an operating officer's duty. It is a responsibility which cannot be safely divided with an outside authority whose decisions would, of necessity, have to be of an arbitary and all-inclusive nature, and made by men not entirely familiar with local conditions.

To anyone not familar by actual experience with the complexity of the problem, the natural thought is, why is it not possible to work out one set of rules which would govern all train operations at all times and in all places? The answer, as already indicated, is that the operating condition and problems with which the rules deal vary widely, and each road must adapt the rules to meet its own special conditions and be free to make prompt changes when necessary. No one can know better than those who are now responsible for the operation of the property, and who have intimate knowledge of actual conditions, whether the rules they have in effect are sufficient or whether there is need for amplification or modification.

This amendment will deny to the railroads the flexibility for adjustment of operating rules and instructions which is necessary to meet promptly changing conditions in day-to-day operation.

Operation by rule is basic and normal to a railroadman. There is no need for any authority to require the issuance of rules. No operating officer would consider for 1 second using any device to govern the operation of a train without first carefully working out the essential operating rules; and, on the other hand, the employees directly concerned expect to be properly instructed before being confronted with any new operating condition. That is the way it must be if safe operation of railroads is to continue. The making and the enforcing of operating rules is not a matter to be subjected to divided responsibility. It is the primary function of railroad management, which bears the responsibility for the results, to make the rules to fit the particular operating conditions to which they apply, to make them provide maximum safety, and then to see to it that they are complied with.

Basically, there is very little difference between the operating rules of different railroads. Given identical circumstances, the rules of different roads are essentially the same, although the wording may differ slightly. Safety of operation would not be enhanced by requiring one railroad to adopt the language of another. Such a requirement would produce confusion, as both men and instructors are familiar with the rules under which they now operate. The proposed amendment apparently does not require that identical rules be adopted, but it is obvious that Commission intervention in the matter

will almost inevitably produce enforced uniformity, as that would be the easiest way for the Commission to formulate rules.

Operating rules are not subjected to change or revision in any promiscuous or haphazard manner. Within the Burlington organization, for example, we have a standing rules committee composed of the officers directly responsible for the operation of each operating district of the railroad. This group has a background of years of experience in all phases of railroad operation and a thorough knowledge of the details relative to the operation under their immediate jurisdiction. They are the officers who are responsible for the administration and proper observance of the rules. No operating rule is established or revised without careful consideration by this committee, and its recommendations are not made effective until they have been approved by the vice president in charge of all operations. Similar methods of handling this important matter are used by all railroads.

Surprise tests and observations are being made and recorded continuously by division operating officers to insure that the employees correctly understand and are observing the operating rules. Our men are orally examined on all of the operating rules biennially, by officers specially trained in this work, to assure the men, as well as the management, that they are familiar with the rules and that all have the same understanding of the meaning of the rules. Similar practices are followed by all railroads. Our rules are such a fundamental tool of our workmen that we consider the changing of a rule which has been in long use and is well understood by the employees to be a matter not to be taken lightly. We fear that the same restraint would not be exercised by a regulatory body, and that the passion for uniformity would be a real source of danger.

I believe the aspect of this proposal I fear most is that if the bill be enacted, the Commission will undertake, on its own motion, to revise, amend, or modify the rules and make such amended or modified rules obligatory upon the railroads and their employees. Regardless of the specifications that the roads would only file with the Commission their own operating rules, such rules would be subject to the Commission's approval or disapproval, and the end result would be that the Commission would dictate the rules.

The present operating rules are the product of years of experience. They are practical and are adapted to the needs of the industry and of the public. Under them, and with the aid of better and stronger track structures, locomotives, cars, brakes, signal systems, and other devices which have become available, more traffic is being handled with greater safety to everyone concerned than ever before. The safety record of the American railroads, broadly speaking, has shown constant improvement over the past 30 years or more, and it is worthy of note, as the testimony of another witness will show, that the record for 1952 is the best of all time.

The proponents of this bill state that its purpose is to promote safety in the operation of the railroads. Years of firsthand experience and knowledge of actual operating conditions are qualifications necessary to enable anyone to exercise the judgment necessary to deal competently with the many problems which arise daily in the operation of a railroad. With the greatest deference to the Commission, it is impossible to conceive how its members could be so qualified to undertake the task of promulgating rules for the operation of all

railroads throughout the country. No one man or body of men could be safely substituted for the large number of experienced operating officers who have made, and are making, the operating rules throughout this country's vast network of railroads with its varied operating conditions.

I think the only conclusion that can be reached, after considering this matter from a reasonable and practical standpoint is that this amendment would not promote safety, but rather would create confusion in railroad operation, dilute responsibility, and operate to the disadvantage of the public.

I thank you.

The CHAIRMAN. Thank you, sir.

STATEMENT OF THOMAS L. PRESTON, GENERAL SOLICITOR, ASSOCIATION OF AMERICAN RAILROADS

Mr. PRESTON. Mr. Chairman, I was on the stand yesterday. The interrogation of this witness, as Senator Potter has pointed out, has brought into the discussion a matter of legal interpretation of this bill.

I wonder if it would be permissible for me to return to the stand for a few minutes and undertake to clarify that aspect of the matter, if I can.

The CHAIRMAN. You may.

Senator PASTORE. I would like to ask this question. The one thing that you seem to dread more than anything else is this element of compulsion. Do you think there is anything that could be worked out that would bring about the same result and yet eliminate this element of compulsion?

I am impressed with the idea that there is some room for improvement. I think if the railroads are left exclusively to themselves, although they have done a remarkable job in the last few years, although we have heard more recently that now is the time for a change, the fact of the matter is that there is some room for improvement.

We have had some very disastrous accidents that might have been avoided if some of the improvements had been made. Do you have any suggestions at all with reference to some statement of policy on the part of the Commission that could be carried out to bring about some semblance of improvement? I am not being critical, now.

Mr. STINE. In my opinion, the majority of accidents are the result of man failure rather than equipment failure.

As I tried to point out in my testimony, I think the proper enforcement of the rules is as big an answer as any to avoiding accidents. I do not see how the enactment of this amendment would help the situation in any way.

Senator PASTORE. Do you feel that the Commission should have the authority to control your speed?

Mr. STINE. No, I don't think the Commission would have all the necessary information that it would need to decide that.

Senator PASTORE. They do control your speed?

Mr. STINE. Not entirely, no. They have in their enforcement on the part of the Signal Inspection Act, in which they already have authority to order certain signal devices, set a limit of 80 miles an hour as being the dividing line between the requirements for a certain

device, and if the speed is maintained below 80 miles an hour, such device is not required. They control the speed in that way.

But they have never entered into the matter of controlling the speed over certain sections of the track or over certain bridges or on certain types of curves. We have had to do that ourselves.

Senator PASTORE. Don't you think that, in speaking about speed, if you had more than X number of cars, you should not go more than 80 miles an hour; don't you think that would be a proper function?

Mr. STINE. I don't see where a certain number of cars would enter into the speed.

Senator PASTORE. The number of cars wouldn't make any difference on the limitation of speed?

Mr. STINE. I wouldn't think so. The track conditions, mainly, govern the speed of the train.

Senator PASTORE. There again, if the track conditions control the maximum speed that could be employed, why shouldn't the Commission have something to say with respect to the condition of the track?

Mr. STINE. I don't see any need for the Commission to say anything about that. All the railroads employ competent engineers to determine what their track structure should be. Certainly, no railroad management would set up any condition where they figured that the speed of the train was going to cause an accident.

Senator POTTER. Mr. Stine, I presume you have, in railroading, the same problem you have in other industries. You have railroad management and you have railroad management. From my limited knowledge, most of it has been good. But I assume there are areas where railroad management has been lax in the enforcement of their own rules, as they relate to safety. How would you propose, as a member of the railroad industry, to jack up, without the compulsion granted to the Commission, this situation; how would it be done? How would you jack up the lax management of a few companies in regard to railroad safety, to enforce the railroad safety rules?

Mr. STINE. The Commission now has authority and does investigate all train accidents. They make their findings and their recommendations. I think, in the field of railroading, the same as in any other field, public opinion has a great deal to do with it.

Senator POTTER. Say you have a train accident which is the result of laxity on the part of railroad management. It is not just that company that gets the black eye. It is the entire industry. It doesn't only apply to the railroad industry; it applies to your airlines and other transportation media.

I don't know. I am just wondering. It is not my intent in any way to punish or to harass the railroad industry. As you have stated, and other witnesses have brought out, I think the industry has made great strides. But I assume—I don't know—that within industry you have management of certain roads that do not come up to the standards that you have in the company with which you are affiliated.

If they are lax in the enforcement of their own rules, what would you do with it, what could you do about it, without giving some authority to the Commission to take action?

Mr. STINE. I don't believe there is any railroad management so lax that they do not profit by experience. I think that all of us profit by the experience and by the things that cause the accident. I don't

believe it is necessary for the Commission to get into the matter of the enforcement of rules in order to bring about this improvement.

Senator POTTER. You think all railroading companies will go out to the fullest limit to enforce their own rules?

Mr. STINE. An accident is certainly the last thing that any railroadman wants to have.

Senator POTTER. I don't know whether it was you, or another witness, to whom I mentioned the accident that happened in Michigan. There was certainly lack of enforcement. I just cited one example. There were many factors involved.

The conclusion was that many rules were violated, lack of enforcement. That is an isolated case.

Mr. STINE. I don't understand exactly how the Commission would go about that very feature, if this amendment were enacted.

When it comes down to the enforcement of the rules, I don't know how the Commission could do any more than the management is now doing to enforce the rules. Certainly, they could tell the management that they had to enforce the rules. But that is nothing the management doesn't know now. They know they must enforce the rules or they can expect accidents.

Any weakening in the enforcement of the train rules now existing will cause accidents. Personally, I think it all comes down to the matter of management's responsibility for the enforcement of the rules they now have, which rules were developed and have been developed over the years as the result of experience.

Senator POTTER. Are you required, at the present time, to submit your rules to the Commission?

Mr. STINE. You mean, the train rules?

Senator POTTER. Yes; your operating rules.

Mr. STINE. No; we are not required to submit the operating rules. In the investigation of the accident, the rules pertaining to the particular accident are submitted to the Commission's inspector. They have full knowledge of what the rules are.

The CHAIRMAN. If the word "rules" had been thrown out of the window and hadn't been brought into this gathering here, and the word "policy" was exchanged for the word "rules," it would have been more helpful, and there would have been less antagonism?

Mr. STINE. I don't believe I quite understand.

The CHAIRMAN. You keep talking about rules in this bill. I say: If the word "policy" was substituted ir the place of "rule" it would help a lot, wouldn't it—trends, policies? It should be the policy of the railroad to have safety devices other than rules?

Mr. STINE. That would certainly change the meaning of the bill to me.

The CHAIRMAN. It would depend upon the strength of the back.

Senator PASTORE. And remove this element of compulsion that you have so much apprehension for.

But somehow I think, myself, that there ought to be a greater connection between the ICC and the railroads. I will say to you, sir, I was amazed—like Mr. Potter, I am a novice at this, too—at the fact that the safety rules are not promulgated by the ICC. The fact is, that has been going on for over 100 years. Again, I compliment you that you have done such a remarkable job in the industry

by controlling the safety on your own. But there is always a tendency for laxity on the part of people.

We control, through State law, the brakes on automobiles because people don't want an accident, of course, but a lot of people get careless about it and run around with bad brakes. They don't quite realize how dangerous it is to public safety until they get into an accident. I am not saying the situation is analogous to the railroad industry, because I agree with you in your philosophy that good safety rules mean more efficiency and more revenue and better competition, and they are very much interested in that.

But, somehow, something ought to be worked up between the railroads and the ICC, even if it is a matter of a statement of policy, as to what standards ought to be adopted for the protection of the public, because I realize you are on the job there and you know the situation and sometimes you may be in a better position to know what is better in the line of safety for your passengers than maybe the ICC. But, certainly, there ought to be some association between the two of you to bring about a standard that would better protect the public.

Mr. STINE. We work closely with the Commission now; in many matters of safety, the Commission's advice is sought and accepted. It is not a matter of our failing to cooperate with the Commission.

Senator PASTORE. I didn't say that, but I think something could be worked out to bring about a solution to this problem.

Mr. STINE. I simply don't feel this bill would accomplish what you have in mind. I think it would create more confusion than anything else.

Senator PASTORE. I am very much surprised at the fact that the industry seems to take the position that this bill amounts to the running of the railroads by the ICC. I don't think that is intended. I think, somehow, that ought to be straightened out.

Mr. STINE. As a practical matter, I feel that is exactly what would be the eventual outcome.

Senator PASTORE. I certainly wouldn't be for that.

The CHAIRMAN. Thank you for your testimony. Mr. Preston. After Mr. Preston is through, we will recess until 2 o'clock this afternoon, and then hear the last witness, who is Mr. D. E. Mumford. Mr. Potter will preside as chairman of the committee at that time.

I might say to you, Mr. Patterson, we are glad to see you here. The committee would like to have you prepare a statement or presentation in rebuttal representing the Commission's point of view.

Mr. PATTERSON. Thank you, Mr. Chairman, I will be glad to do that.

Senator PASTORE. May I interpose this suggestion, Mr. Chairman, that Mr. Patterson direct himself to this issue that we are discussing now about the broadness of this authority and exactly what they mean and intend to carry out through this legislation.

I think there is too much fright, and justifiably so, if the language is broad, that the ICC could actually come in and handle the trains, and a lot of other things.

Mr. PATTERSON. I will be glad, at some time, to make a short statement on that.

Mr. PRESTON. Mr. Chairman, I appreciate the opportunity to interject myself.

The CHAIRMAN. There is no such thing as that. You are a help to us for doing it.

Mr. PRESTON. That is kind of you to say so. I shall endeavor to be of help in promoting a clearer understanding of the basis for the great apprehension of the railroads with respect to the coverage of this bill.

I think there has been a failure to grasp the separability of the bill into two distinct fields. If you will look at page 2, you will see see that the bill itself is divided numerically into 2 separable parts, 1 having to do with the installation of block-signal system, interlocking, automatic train-stop, train-control, and/or cab-signal devices, and/or other similar appliances, methods, and systems intended to promote the safety of railroad operation.

That is in the present law. The Commission has that authority. We make no suggestion that that authority be eliminated or in any way reduced.

In that field of installations, this bill would enlarge the scope of the provision to include telephone, telegraph, radio, inductive, or other wayside and/or train-communication systems.

With respect to that addition, our position, in a word, is that there is no occasion for that. But it is not that provision of the bill upon which is founded our great apprehension that the bill will amount to an introduction of the Commission into the role of practically managing the operation of the trains over the entire mileage of the United States.

Senator POTTER. You say that is not the position?

Mr. PRESTON. No, our position there is that there is a lack of demonstrated occasion.

But coming to the next provision, No. 2, separated from the other, on the face of the bill it is to establish, maintain, and observe rules and regulations for the operation of trains in connection with the above-named devices, appliances, methods, and systems, intended to promote safety of railroad operation.

We submit, for the careful consideration of this committee, the fact that probably never has there been in so seemingly innocuous language so insidious an approach to the introduction of the Commission into the operation of the railroads as this very provision we are talking about now.

Senator PASTORE. At this point, Mr. Preston, let me ask you a question. Going back to No. 1, you say, "To install the block-signal system, interlocking, automatic train-stop," and so on, down to the word "operation," is presently in the law.

Mr. PRESTON. That is correct.

Senator PASTORE. How does the ICC enforce that provision of law? Doesn't it do it by the establishment of rules?

Mr. PRESTON. It does it by the establishment of rules for the installation and the maintenance of those devices themselves. It does not, however, go to the length under that provision of prescribing not merely safety rules for the operation of trains, but all rules which, in effect, amount to the management of the actual operation of the railroads bearing upon efficiency, and, to be sure, upon safety.

Senator PASTORE. Let me ask you this other question: Would your fears be somewhat quieted if, on line 8, you just added the words,

"and to promulgate and establish rules for the observance of the same"? I think you are afraid of the word "operation."

Mr. PRESTON. No; I am afraid of the phrase, "operation of trains," and I say that the presumably limiting phrases in this language are without any substantial meaning whatever.

To say that the rules and regulations here referred to are for the operation of trains in connection with the above-named devices means nothing by way of limitation, since it is perfectly clear that no train can be operated except in connection with some signaling or communication system. So that language, on its face, apparently is designed to operate as a limitation on the overall authority in this field of operation, and is really without any meaning as a limitation.

Then, "intended to promote the safety of railroad operation," as a limitation, certainly affords no basis whatever for ascertaining any limitation or any containment of the overall operating authority that the bill would confer on the Commission, since all operations, everything having to do with the operation of trains, of necessity, is done with the intention of promoting safety. The whole field of railroad operation affects safety. The whole field of railroad management affects safety, and is intended to do so.

As I say, the apprehension that we have is that this provision of the bill about rules for the operation of trains is not confined, and we are inclined to think it cannot be confined, in such a way that it would not authorize the Commission, in effect, to take over the operation of the railroads.

Senator PASTORE. You mean, no language could be drawn up to protect the public and to give to the ICC the authority to make certain rules with reference to promoting public safety without actually getting into the running of the railroad?

Mr. PRESTON. No, I don't mean that at all, Senator. On the contrary, you should understand, of course, that the Commission already has, and under this provision No. 1 on page 2 would have an added scope of authority with respect to railroad safety.

The Boiler Inspection Act, the Safety Appliance Act the Hours of Service Act, and section 25 of the Interstate Commerce Act, as they stand today, do afford to the Commission a wide authority with respect to factors affecting safety of railroad operations. They can tell the railroads what locomotive to take out of service, and when to take it out. They can tell the railroads what signaling systems to install and require that they be installed. Under this new provision, in the first part of this bill, they could tell them what they should do with respect to the installation of radio, and further, they could prescribe the rules and regulations for those installations and for their maintenance and upkeep in a proper operative condition.

We are not complaining about that kind of authority with respect to the installations already covered by the act. We do complain, and we do say that it would be an ominous thing, under the guise of a safety bill, to incorporate any such language as this second provision here, not limited to the matter of safety, but extending over the whole field of railroad management and the operation of its trains.

Senator PASTORE. You don't seriously think the ICC wants that?

Mr. PRESTON. I say, from the standpoint of a legislator conferring power upon a regulatory agency, the test should not be what you suppose might be the individual restraint of those upon whom you

confer power. We have learned in recent history enough of the reliance upon the benignity of dictators in the political sphere, and without meaning any insidious comparison, of course, I say the same kind of principle is involved when you confer the power upon these regulatory bodies.

It ought to be possible to express clearly the scope of the authority granted, and a bill which doesn't do it ought not to be passed

Senator PASTORE. I agree with you. The only point I am trying to make, Mr. Preston, is that we ought to boil down to simple terms exactly what the ICC is trying to have done, and then we ought to be able to write simple language to say so.

If there is anything in this bill which would lead to this wide scope of authority which would run into the management of the railroads, I don't think the ICC intended that, and I don't think the committee would allow it.

Mr. PRESTON. The ICC has, since 1949, undertaken to devise clarifying legislation, and yet it comes back here this year and supports language which its own spokesman, in 1949, said he was unable to determine the meaning of.

You were not here yesterday. I referred yesterday to the fact that practically the same legislation was proposed in 1949, and was the subject of very extended hearings. There was great remonstrance, as there is now, against the breadth of this proposed language, rules for the operation of trains. The Commission undertook to suggest at that time amendments which would effectuate some suitable limitation and forestall this dire consequence which we foresee as a possibility through the adoption of this bill.

Notwithstanding those amendments, which were the provisions in connection with the above-named devices, and for the purpose of promoting safety of railroad operation, after those amendments were in, Commissioner Splawn testifying on the bill, as amended, which was the same bill as you have here right now, said that his attention had been called to that particular language, being the language quoted by Mr. Wolverton in his interrogation, "in respect to the operation of trains."

Commissioner Splawn said:

> My attention was called to that particular language, Mr. Wolverton, along the line of your question, when I read in the record, the transcript of the record, some of your questions concerning that. I have given that phrase a good deal of thought, and I am very much troubled by it. I do not know, Mr. Wolverton, what could be done under that phrase.

There is the spokesman of the ICC speaking, then, of the bill which the Commission, itself, had sought to amend, saying that, notwithstanding their own amendment, far be it from him to undertake to say what the limitation, if any, upon——

Senator POTTER. He is referring to the same language that we are referring to now?

Mr. PRESTON. The bill, as amended.

Mr. PATTERSON. I know this is a little irregular, but would you permit me to ask the witness a question?

The CHAIRMAN. I am sure he would be glad to have you do so.

Mr. PATTERSON. On page 2, line 8, would it satisfy his criticism if the word "trains" in line 9 had substituted for it the word "devices"?

Then, it would read this way, "To establish, maintain, and observe rules and regulations for the operation of devices"——

Mr. PRESTON. Mr. Patterson, there could be no question about my quick reaction to that suggestion. It is that it would to a very considerable extent serve to ameliorate the apprehension that we have. I would not, however, like to be required on just a moment's notice, to state——

Mr. PATTERSON. I have only had a moment.

Mr. PRESTON. To state a considered position of the industry for which I speak with respect to that suggestion.

The real way to do the thing and still accomplish the most that could be justified, in our opinion, would be to cut 2 out of the bill and, if by reason of the occasional occurrences of such mishaps as that at the Union Station last January, the committee, in its judgment, should think that radio installations should be added to the block-signal system, interlocking, automatic train stop, and so on, already provided for, then that feature which was so much talked about by some of the Senators this morning, communication end to end, would be brought within the province of the ICC and that would be settled without introducing into this bill a proposal which is not a safety proposal, but whether, intentionally or not, and I think unintentionally, is an insidious insertion of the authority of the Commission into overall railroad operation.

We say that is a dangerous thing to do, that it would inevitably have a very bad, if not, indeed, fatal effect upon the effectiveness of the private management and operation of our railroads.

Senator POTTER. In other words, it is your recommendation, rather than to amend this, that we strike it entirely?

Mr. PRESTON. Strike No. 2 entirely. And if, notwithstanding our position that there is no occasion for it, you should wish to confer upon the Commission the authority with respect to radio——

Senator POTTER. In other words, what that would do would be to include with the existing law the features that are required, your communication features?

Mr. PRESTON. That is right.

The CHAIRMAN. What that would do, if you strike 2, would be to gut the bill. That is my opinion. I may be wrong.

Mr. PRESTON. Of course, I don't mean to contradict you offhand, Mr. Chairman.

The CHAIRMAN. We are talking together as two gentlemen.

Mr. PRESTON. My thought on that would be that, if it is desired to bring this radio communication installation matter within the province of the Commission, there is no occasion on the part of this bill following (2), it would only be necessary in that parenthetical phrase in No. 1 to say, "including radio." As to the rest of that, telegraph and telephone, there has not been a word of testimony to support any such proposal as that.

Senator PASTORE. I directed this question, in part, to Mr. Patterson, too. Presently, with the exception of the matter that is on line 5, which is enclosed in parentheses, the Commission now has certain rights in the present law with reference to safety devices. But that only goes into the field of installation; am I right?

Mr. PRESTON. Installation and maintenance in a proper operative condition.

Senator PASTORE. They still have that authority?

Mr. PRESTON. They have that in these provisions of the bill.

Senator POTTER. Under existing law?

Mr. PRESTON. Under section 25 of the Interstate Commerce Act, yes, sir, they have that.

Senator PASTORE. They have authority even to supervise the proper maintenance of these devices?

Mr. PRESTON. That is correct. Let me read you the provisions of section 25 in that connection, because it is certainly important that that should be clearly understood. Here is section 25, and the pertinent portion of it. It is subparagraph (b) of section 25 of the Interstate Commerce Act:

> That the Commission may, after investigation, if found necessary in the public interest, order any carrier within a time specified in the order, to install the block-signal system. Interlocking, automatic train-stop, train-control, and/or cab-signal devices, and/or other similar appliances, methods and systems intended to promote the safety of railroad operation, which comply with specifications and requirements prescribed by the Commission, upon the whole or any part of its railroad, such order to be issued and published a reasonable time (as determined by the Commission) in advance of the date for its fulfillment.

There is a proviso following that which is not really pertinent to our discussion here, and a second proviso likewise not pertinent, and then we come to the next paragraph (c), which reads this way.

> Each carrier by railroad shall file with the Commission its rules, standards, and instructions for the installation, inspection, maintenance, and repair of the systems, devices, applicances covered by this section within 6 months after the enactment of this amendatory provision, and, after approval by the Commission, such rules, standards, and instructions, with such modifications as the Commission may require, shall become obligatory upon the carrier.

There you have already, with respect to the provisions covered by the act, authority in the Commission over the rules and the standards and the instructions governing the installation, the maintenance, the upkeep, of those devices. Those may be changed by the Commission, and as changed, they become obligatory upon the carrier, and failure to comply with them subjects the carriers to the pains and penalties of violation of the Commission's order.

Senator PASTORE. I just want to ask this other question, and it is the last question I have. It doesn't have to be answered now. I hope you and Mr. Patterson will think about it. Why wouldn't it serve the purpose of this entire legislation, in view of the fact that the power of the Commission is not restricted alone to the installation but to the maintenance of this equipment once it is installed by that second paragraph that you read, by merely adding line 5 in the present law, if the purpose of this is to include in this block system, and so on and so forth, telephone, telegraph, radio, inductive, or other wayside and/or train-communication systems, why not add that into the present law, and wouldn't that serve the purpose of the Commission?

Mr. PRESTON. It is precisely our position that it will serve every legitimate purpose of the Commission.

The CHAIRMAN. The Commission doesn't have any illegitimate purposes.

Senator PASTORE. You mean, every reasonable——

Mr. PRESTON. It would serve to eliminate any provision which could or might lead to the substitution of Commission responsibility

for the operation of the railroads in the place and stead of private management in that regard.

The CHAIRMAN. The time has come to recess. I want to thank you, Mr. Preston, for coming back before us. We stand recessed until 3 o'clock, to meet again in this room.

(Whereupon, at 1:05 p. m., the committee recessed, to reconvene at 3 p. m. the same day.)

AFTERNOON SESSION

(The committee reconvened at 3 p. m., the Honorable Charles E. Potter, presiding.)

Senator POTTER. The afternoon session will come to order. Is Mr. Mumford here? Mr. Mumford, if you are ready, we are ready.

STATEMENT OF D. E. MUMFORD, MANAGER OF SAFETY, NEW YORK CENTRAL SYSTEM AND IMMEDIATE PAST CHAIRMAN OF SAFETY SECTION, ASSOCIATION OF AMERICAN RAILROADS

Mr. MUMFORD. My name is Donald E. Mumford. I am manager of safety for the New York Central System; past general chairman of the railroad section, National Safety Council; immediate past chairman of the safety section, Association of American Railroads; incumbent chairman of the committee on education of that section, and a member of its committee of direction. In addition, I have been for several years a member of the board of directors of the National Safety Council, member-at-large of its industrial safety conference and liaison representative of its home safety conference. I am serving my fourth term as chairman of a special off-the-job safety committee of the industrial conference. I have also served for several years as a member of the President's Highway Safety Conference and as an original and continuing member of the Committee on Programs and Services of the President's Industrial Safety Conference.

I appear here today in behalf of member lines of the Association of American Railroads in opposition to S. 539. My statement will deal with the safety aspects of the bill.

In the course of my statement I shall show (1) that during the past 30 years the railroads have made definite and most substantial improvement in the safety of their operations; (2) that current accident and casualty trends are sharply downward, reflecting continuing progress in accident prevention; (3) that analysis of the causes of railroad accidents fails to reveal the need for legislation of this kind.

Attached hereto are several statistical tables drawn from reports of the Interstate Commerce Commission. They reflect a 30-year record of casualties to persons in railroad accidents. They are offered for the record.

Senator POTTER. Without objection, they will be inserted in the record at this point.

(The tables referred to are as follows:)

TABLE I.—*Fatalities to persons*[1] *in railroad accidents—All steam railways in the United States*

Year	Trespassers (1)	Persons in highway grade crossing accidents (2)	Employees on duty (3)	Passengers on trains (4)	Other non-trespassers (5)	Total (6)
1923	2,688	2,135	1,940	99	373	7,235
1924	2,482	2,042	1,477	106	348	6,455
1925	2,511	2,086	1,521	131	363	6,612
1926	2,493	2,388	1,586	119	355	6,941
1927	2,654	2,262	1,490	48	358	6,812
1928	2,379	2,476	1,243	54	352	6,504
1929	2,307	2,398	1,348	70	365	6,488
1930	2,304	1,954	935	33	250	5,476
1931	2,401	1,759	644	24	265	5,094
1932	2,505	1,471	557	13	201	4,747
1933	2,826	1,474	500	38	181	5,019
1934	2,654	1,501	526	27	171	4,879
1935	2,712	1,618	555	18	204	5,107
1936	2,738	1,700	669	17	274	5,398
1937	2,569	1,818	666	18	279	5,350
1938	2,298	1,476	479	69	177	4,499
1939	2,294	1,364	499	27	178	4,362
1940	2,027	1,769	533	75	208	4,612
1941	2,146	1,887	749	34	270	5,086
1942	1,979	1,900	941	91	322	5,233
1943	1,715	1,668	980	253	326	4,942
1944	1,491	1,765	978	239	308	4,781
1945	1,537	1,839	892	132	291	4,691
1946	1,542	1,792	672	103	253	4,362
1947	1,400	1,746	709	65	245	4,165
1948	1,370	1,569	568	43	218	3,768
1949	1,218	1,470	403	26	190	3,307
1950	1,165	1,535	358	173	167	3,398
1951	1,091	1,535	395	142	195	3,358
1952	999	1,375	352	12	188	2,926

[1] Excludes suicides, and persons jumping from equipment while mentally deranged, to escape custody etc., for entire period.

Source: Interstate Commerce Commission.

TABLE II.—*Casualties to all classes of employees on duty*[1]*—line-haul railways of class I in the United States*

Year	Fatalities	Nonfatal injuries	Man-hours worked (thousands)	Casualties per million man-hours	
				Fatalities	Nonfatal injuries
	(1)	(2)	(3)	(4)	(5)
1923	1,836	145,761	4,802,030	0.38	30.35
1924	1,367	118,639	4,416,781	.31	26.86
1925	1,437	112,716	4,405,356	.33	25.59
1926	1,502	105,456	4,506,711	.33	23.40
1927	1,395	82,399	4,356,116	.32	18.92
1928	1,166	65,358	4,141,804	.28	15.78
1929	1,269	55,824	4,175,022	.30	13.37
1930	882	32,379	3,595,894	.25	9.00
1931	615	20,844	2,895,030	.21	7.20
1932	525	15,909	2,258,063	.23	7.05
1933	468	14,126	2,117,011	.22	6.67
1934	481	15,373	2,267,515	.21	6.78
1935	525	14,728	2,265,664	.23	6.50
1936	636	19,740	2,531,764	.25	7.80
1937	617	21,157	2,646,909	.23	7.99
1938	455	14,397	2,192,822	.21	6.57
1939	462	15,097	2,342,153	.20	6.45
1940	495	15,940	2,456,102	.20	6.49
1941	703	22,745	2,813,950	.25	8.08
1942	879	32,052	3,219,726	.27	9.95
1943	927	41,765	3,577,363	.26	11.67
1944	907	43,005	3,724,644	.24	11.55
1945	837	42,885	3,681,689	.23	11.65
1946	627	34,536	3,345,732	.19	10.32
1947	624	31,559	3,322,574	.19	9.50
1948	529	27,013	3,253,207	.16	8.30
1949	370	18,949	2,743,005	.13	6.91
1950	340	18,772	2,614,333	.13	7.18
1951	371	19,855	2,709,051	.14	7.33
1952	319	17,592	2,576,533	.12	6.83

[1] Includes suicides, and persons jumping from equipment while mentally deranged, to escape custody etc., for years 1923–32, excludes such casualties for years 1933–52.

Source: Interstate Commerce Commission.

TABLE III.—*Casualties to passengers on trains*[1]*—Line-haul railways of class I in the United States*

Year	Fatalities		Nonfatal injuries		Passenger-miles (thousands)	Casualties per hundred million passenger-miles	
	Total	Train accidents only	Total	Train accidents only		Fatalities	Nonfatal injuries
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1923	102	41	5,538	2,581	37,956,595	0.27	14.59
1924	121	40	5,129	2,108	36,090,886	.34	14.21
1925	139	83	4,752	2,012	35,950,223	.39	13.22
1926	130	79	4,275	1,796	35,477,525	.37	12.05
1927	56	10	3,658	1,463	33,649,706	.17	10.87
1928	59	16	3,262	1,375	31,601,342	.19	10.32
1929	72	30	3,625	1,635	31,074,135	.23	11.67
1930	38	7	2,522	777	26,814,825	.14	9.41
1931	30	4	2,006	487	21,894,421	.14	9.16
1932	17	1	1,818	410	16,971,044	.10	10.71
1933	37	22	1,960	652	16,340,510	.23	11.99
1934	27	12	1,860	390	18,033,309	.15	10.31
1935	18	1	1,862	364	18,475,572	.10	10.08
1936	16	6	2,423	732	22,421,009	.07	10.81
1937	18	3	2,494	536	24,655,414	.07	10.12
1938	69	52	2,266	472	21,628,718	.32	10.48
1939	27	13	2,489	775	22,651,334	.12	10.99
1940	75	66	2,523	862	23,762,359	.32	10.62
1941	33	17	2,904	1,167	29,350,229	.11	9.89
1942	91	38	3,376	1,190	53,658,615	.17	6.29
1943	253	205	4,995	2,357	87,819,503	.29	5.69
1944	238	181	4,670	1,861	95,549,090	.25	4.89
1945	132	65	4,695	1,950	91,717,226	.14	5.12
1946	103	65	4,600	1,584	64,673,453	.16	7.11
1947	65	34	4,103	1,232	45,920,576	.14	8.93
1948	43	19	3,502	934	41,179,040	.10	8.50
1949	26	6	2,488	495	35,094,501	.07	7.09
1950	173	149	3,336	1,430	31,760,001	.54	10.50
1951	142	126	3,129	1,365	34,613,546	.41	9.04
1952	12	0	1,985	275	34,017,471	.04	5.84

[1] Includes suicides, and persons jumping from equipment while mentally deranged, to escape custody, etc., for years 1923–32, excludes such casualties for years 1933–52.

Source: Interstate Commerce Commission.

TABLE IV.—*Casualties to employees on duty and to passengers on trains by kinds of accidents, year 1952—all steam railways in the United States*

Kind of accident	Employees on duty		Passengers on trains	
	Fatalities (1)	Nonfatal injuries (2)	Fatalities (3)	Nonfatal injuries (4)
Nontrain accidents	74	8,863		
Train-service accidents:				
Coupling or uncoupling—				
Cars or locomotives	9	523		
Air hose	8	274		
Operating locomotives	3	719		
Operating hand brakes	6	831		
Operating switches		582		
Coming in contact with fixed structures	7	177		2
Getting on or off cars or locomotives	17	2,894	7	843
Accidents at highway grade crossings	4	42		5
Struck or run over, not at public crossings	76	180		
Miscellaneous	93	4,959	5	865
Total, train service accidents	223	11,181	12	1,715
Train accidents:				
Collisions	22	228		73
Derailments	16	184		176
Locomotive-boiler accidents	7	12		
Other locomotive accidents				1
Miscellaneous	10	68		27
Total, train accidents	55	492		277
Grand total, all accidents	352	20,536	12	1,992

Source: Interstate Commerce Commission.

TABLE V.—*Casualties to employees on duty in train accidents—All steam railways in the United States*

Year	Locomotive-miles (millions)	Fatalities	Nonfatal injuries	Casualties per million locomotive-miles	
				Fatalities	Nonfatal injuries
	(1)	(2)	(3)	(4)	(5)
1923	1,831	275	1,939	0.15	1.06
1924	1,745	216	1,477	.12	.85
1925	1,774	232	1,483	.13	.84
1926	1,833	190	1,589	.10	.87
1927	1,777	194	1,211	.11	.68
1928	1,746	138	1,128	.08	.65
1929	1,778	160	1,005	.09	.57
1930	1,591	129	633	.08	.40
1931	1,360	92	414	.07	.30
1932	1,131	63	326	.06	.29
1933	1,107	66	351	.06	.32
1934	1,156	96	352	.08	.30
1935	1,183	77	363	.07	.31
1936	1,321	119	537	.09	.41
1937	1,369	127	498	.09	.36
1938	1,178	85	341	.07	.29
1939	1,241	94	421	.08	.34
1940	1,309	90	436	.07	.33
1941	1,492	120	649	.08	.43
1942	1,706	204	975	.12	.57
1943	1,811	168	1,149	.09	.63
1944	1,819	151	1,133	.08	.62
1945	1,754	136	1,289	.08	.73
1946	1,609	128	917	.08	.57
1947	1,627	131	990	.08	.61
1948	1,569	99	716	.06	.46
1949	1,374	68	508	.05	.37
1950	1,389	60	601	.04	.43
1951	1,410	77	673	.05	.48
1952	1,333	55	492	.04	.37

Source: Interstate Commerce Commission.

TABLE VI.—*Casualties to employees on duty and to passengers on trains by principal causes of accidents, year 1952—All steam railways in the United States*

Cause of accident	Employees on duty		Passengers on trains	
	Fatalities (1)	Nonfatal injuries (2)	Fatalities (3)	Nonfatal injuries (4)
Negligence of employees:				
Train orders	8	22		9
Fixed signals	7	28		20
Hand signals	2	15		5
Train flagging	2	10		1
Airbrakes	1	4		1
Handbrakes	1	13		
Switches	2	32		14
Other	22	174		32
Total	45	298		82
Defects in or failures of equipment:				
Locomotive boilers and appurtenances		2		
Other parts and appurtenances of locomotives	2	2		1
Trucks		10		2
Wheels and axles		22		33
Power brakes and appurtenances except air reservoirs and pumps on locomotives	1	8		
Hand brakes, brake rigging, and appurtenances				6
Couplers		1		
Draft rigging		2		2
Car bodies and other parts of equipment		1		
Total	3	48		44
Defects in or improper maintenance of way and structures:				
Bridges, trestles, culverts, and tunnels				
Tirs and tie plates				
Rails and joints	1	26		101
Frogs and switches	2	6		2
Interlocking and block signal systems				1
Miscellaneous		11		
Total	3	43		104
Miscellaneous train accidents:				
Improper loading		2		
Negligence of nonemployees		2		
Malicious acts or other misbehavior of nonemployees		1		
Other ascertained causes	3	95		47
Unascertained causes	1	3		
Total	4	103		47
Grand total, train accidents	55	492		277

Source: Interstate Commerce Commission.

TABLE VII.—*Accidents investigated by the Bureau of Safety, Interstate Commerce Commission, by principal causes—3 years ended June 30, 1952*

Principal causes	Year ended June 30—			Total
	1952 (1)	1951 (2)	1950 (3)	(4)
Negligence of employees	29	39	32	100
Defects in or failure of equipment	3	3	3	9
Defects in or failure of way and structures (broken rails, washouts, etc.)	11	14	16	41
Motor vehicles at grade crossings	5	2	7	14
Miscellaneous:				
Track and structures	1	2	3	6
Operating conditions and practices	9	5	6	20
Undetermined	1			1
Total	59	65	67	191

TABLE VIII.—*Accidents investigated by the Bureau of Safety, Interstate Commerce Commission, involving operating conditions and practices, 3 years ended June 30, 1952*

	Number
I. NEGLIGENCE OF EMPLOYEES	
Head-end collisions:	
Switch being opened immediately in front of approaching train	2
Failure to obey a meet order	7
Inferior train occupying main track on time of opposing superior train without flag protection	2
Error in furnishing information to section foreman concerning train movements	1
Train being admitted to block occupied by opposing train	1
Train being admitted under clear block authority to block occupied by opposing track motorcar	1
Failure to obey provisions of a train order	1
Failure to operate train in accordance with signal indications	3
Train occupying main track without authority	2
Train occupying main track on time of opposing superior train without protection	6
Train fouling main track in front of opposing train	2
Failure properly to control speed of trains moving within yard limits	2
Failure to deliver meet order	1
Switch being opened immediately in front of opposing train	1
Track motorcar occupying main track without authority	1
Cut of MU cars moving out of control	1
Train being operated against current of traffic without protection	1
Failure to provide protection for train advanced to meeting point where opposing train was to receive meet order	1
Total, head-end collisions	36
Rear-end collisions:	
Failure to operate following train in accordance with signal indications	18
Failure properly to control speed of train moving within yard limits	8
Failure properly to control speed of engine moving within yard limits	1
Failure to provide adequate protection for train occupying main track on time of following superior train	2
Failure properly to control speed of following train moving on a siding	1
Failure properly to control speed of following train in accordance with flagman's instructions	1
Failure properly to control speed of following train on descending grade	1
Failure to provide adequate protection for preceding train	2
Failure to provide rear-end protection for movement of track motorcar	1
Total, rear-end collisions	35
Side collisions:	
Failure to operate train in accordance with signal indications	10
Failure to obey a meet order	1
Failure to properly to control switching movement	1
Failure properly to control speed of train approaching railroad crossing at grade	1
Train occupying main track immediately in front of approaching train	2
Switching movement occupying main track immediately in front of approaching train	1
Failure to make proper delivery of a train order	1
Total, side collisions	17
Miscellaneous collisions:	
Cars moving out of control on a grade	1
Failure to operate train in accordance with instructions governing movements on a station track	1
Failure to provide protection on adjacent track after train was stopped by emergency application of brakes	1
Failure to operate train in accordance with signal indications	1
Total, miscellaneous collisions	4
Derailments:	
Excessive speed on curve	5
Train entering turnout at excessive rate of speed	1
Train moving out of control on descending grade	1
Locomotive with cars moving out of control on descending grade	1
Total, derailments	8
Grand total, negligence of employees	100
II. MISCELLANEOUS—OPERATING CONDITIONS AND PRACTICES	
Head-end collisions:	
Failure to provide adequate protection for movement of track motorcar	11
Open switch	1
Rear-end collisions:	
Failure to provide adequate protection for movement of track motorcar	4
Open switch	1
Side collisions: Failure to provide adequate protection for movement of track motorcar	1

TABLE VIII.—*Accidents investigated by the Bureau of Safety, Interstate Commerce Commission, involving operating conditions and practices, 3 years ended June 30, 1952*—Continued

	Number
II. MISCELLANEOUS—OPERATING CONDITIONS AND PRACTICES—continued	
Miscellaneous collisions:	
Failure to establish definite and adequate rules governing movements on station tracks	1
Open switch	2
Derailed cars obstructing main track immediately in front of approaching train	2
Total, collisions	23
Derailments:	
Open switch	2
Use of snowplow improperly designed for service in which it was used	1
Total, derailments	3
Grand total, miscellaneous causes	26

Mr. MUMFORD. Table I shows for each of the years 1923 to 1952 the number of fatalities to persons of all classes in railroad accidents of all kinds, excluding only suicides and persons jumping from equipment while mentally deranged or while attempting to escape custody. Although there were about 10 percent fewer passenger-miles of service performed by the Nation's railroads in 1952 than in 1923, the comparison of freight service in those 2 years shows about 50 percent more ton-miles in the later year. Thus, in the aggregate, the railroads performed a much greater transportation service in 1952 than in 1923. With this in mind, one can more readily understand the general overall improvement in the railroad-fatality record.

For example, note that in the 30-year period fatalities to trespassers (col. 1) were cut more than 60 percent; fatalities to persons in highway grade-crossing accidents (col. 2) were reduced by more than one-third, despite a tremendous increase in motor-vehicle mileage; fatalities to employees on duty (col. 3) show a decrease of more than 80 percent; passenger fatalities (col. 4) decreased more than 85 percent; fatalities to other nontrespassers (col. 5) declined by approximately 50 percent; and the total fatalities to all classes of persons (col. 6) in 1952 were reduced by nearly 60 percent below 1923, and were the lowest for any of the 64 years for which the Interstate Commerce Commission has records.

In its report to your committee in support of S. 539, the Legislative Committee of the Interstate Commerce Commission commented on the fact that during the year 1951 there were 3,207 persons killed and 22,607 injured in railroad train and train-service accidents. It was stated that "all possible means should be used to reduce this heavy toll." The railroads are, of course, in complete accord with that desirable result. However, before determining what means are best adapted to achieve further improvement complete understanding must be had of the nature of the problem.

The statistics given in table I and those that follow give a much better prespective of the nature of the railroad safety problem that can be obtained merely by recitation of the aggregate number of casualties in railroad accidents of all kinds. It will be noted from table I that roughly one-third of all fatalities in railroad accidents are to trespassers. Nearly 50 percent of the total are to persons in

highway grade-crossing accidents. It is difficult to understand how this bill would affect either of those two classes of casualties. Less than 20 percent of total fatalities are to employees, passengers, and persons other than trespassers and those in highway grade-crossing accidents. As I shall show at a later point, only a limited part of those fatalities could conceivably be affected by passage of this bill, even assuming that it would have the beneficial effects claimed for it. We do not believe that it would have such beneficial effects, but rather would have an opposite result.

Using 1952 as the base year, total fatalities in railroad accidents were distributed as follows:

	Percent of total
Traspassers	34. 1
Highway (grade)	47. 0
Employees on duty:	
Train and train-service accidents	9. 5
Nontrain accidents	2. 5
Passengers on train	.4
Other nontrespassers	6. 5
Total	100. 0

Thus, 81 percent of the total fatalities in railroad accidents in 1952 were to trespassers on railroad property or to persons in highway grade-crossing accidents. Of the total, only about one-tenth represented employees on duty and passengers on trains in accidents involving the movement or operation of trains, locomotives, or cars.

In these figures you have a true indication of the trend in the safety performance of the railroads in the past 30 years. The record is uniformly good and stands today at its best point in history. The statistics show that the present high level of safety on American railroads has been achieved in an orderly and progressive way, the result of planned and programed effort. The introduction of disturbing factors into the picture, such as the divided responsibility which this bill contemplates, can only lead to demoralization in railroad safety work.

Table II shows the casualty experience of employees of class I line-haul railroads for the 30-year period 1923 to 1952, inclusive. It does not include railroads of other classes, because statistics of man-hours worked are not available for the so-called short-line railroads.

Senator POTTER. Will you yield right there? What are the various classes of railroads?

Mr. MUMFORD. Well, the class 1 railroads are those, of course, with an income of over $1 million per year from operating revenues. Your others are called the short-line railroads.

Senator POTTER. The short-line refers to the other class?

Mr. MUMFORD. Short-line, switching, or terminal.

Columns 1 and 2 list, respectively, fatalities and nonfatal injuries to all classes of employees on duty in accidents of all kinds. Column 3 gives the man-hours worked by all employees. Columns 4 and 5 show the fatality and injury rates per million man-hours worked, which is the customary basis for the measurement of safety trends in employment.

Starting with 1923 and progressing downward in columns 4 and 5, you will note a steady and almost continuous improvement in employee fatality and injury rates through 1935. In 1936 and 1937 a temporary

rise in rates is noted, but in 1938, 1939, and 1940 this trend was reversed and the best yearly results in the prewar period with respect to railroad employee safety were attained.

During the war, in the years 1941 to 1945, the loss of skilled employees to the war effort both to military service and to other industry, with attendant replacement by inexperienced workers, plus a tremendous increase in both freight and passenger traffic, which brought about the employment of several hundred thousand additional workers, changed the picture with regard to employee safety. The influx of inexperienced workers, many of whom proved to be unsuited for the work, the high turnover of railroad labor, and the continuing shortage of workers, together with shortages of steel and other materials required for the war effort, all resulted in overwork and undermaintenance of railroad facilities.

The surprising thing was that employee casualty rates were so well contained as they were during the war years. Although it will be noted that during the 5 years of the war the rates were generally higher than in the depression period of the 1930's, it will likewise be observed that both fatality and injury rates were lower than in any year prior to 1930.

With the termination of war, the railroads embarked on a program of restoration and modernization which, while initially slowed by shortages of steel and other materials, has continued steadily with annual expenditures for such purposes running over a billion dollars. That this program has had a marked beneficial effect upon railroad employee safety is clearly indicated by the casualty rates in the postwar years shown in table II. In 1949 and 1950 the employee fatality rate reached a new all-time low of 0.12 per million man-hours, and in 1952 this was reduced even lower to 0.12. The injury rate has, it will be noted, continued its trend of improvement. These statistics in table II demonstrate that insofar as railroad employees are concerned the railroads are now being operated more safely than at any period in their history, and the trends are ever toward improvement and the establishment of new low records.

Turning now to table III, we find the record of passenger safety for the period 1923 to 1952. Here again a general improvement over the 30-year period is quite obvious. The fatality rate of 0.04 per hundred million passenger-miles in 1952 was the lowest in any of the years for which records have been maintained by the Commission. The injury rate of 5.84 was bettered in only 3 of the preceding 29 years; namely, 1943, 1944, and 1945. In this table we have made a separation to show, in addition to the total passenger injuries and fatalities, those fatalities and injuries which occurred in train accidents only, as such accidents are defined by the Interstate Commerce Commission.

The year 1952 was the first in the 64-year period for which statistics are available in which not a single passenger lost his life in a train accident.

Senator POTTER. Not a single passenger?

Mr. MUMFORD. Not a single passenger in a train accident.

Senator POTTER. That is a good record.

Mr. MUMFORD. As I shall show in a moment, none of the 12 fatalities to railroad passengers in train-service accidents in 1952 resulted from causes which this bill could in any way eliminate. I may point out also that no agency of intercity transport has accom-

plished over the years so outstanding a safety record in the handling of passengers as have the railroads.

I shall now analyze the casualties to employees and passengers by kinds of accidents. Table IV gives such a breakdown, showing casualties to employees on duty and to passengers on trains in 1952 by kinds of accidents. The totals in this table are slightly larger than the figures shown for 1952 in table II and table III, for the reason that table IV covers all line-haul railways and switching and terminal companies, whereas the two preceding tables apply only to class I line-haul companies.

Table IV segregates accidents into three principal divisions, with various subclassifications. The first division is nontrain accidents. The movement or operation of trains, locomotives, or cars is in no way involved in such accidents, and it is clear that the bill here under consideration would leave no effect on them. In the case of employees nontrain accidents in 1952 accounted for 21 percent of the total employee fatalities in accidents of all kinds and 43.2 percent of all employee injuries were likewise chargeable to nontrain accidents. Passengers on trains would, of course, not be involved in this division.

The second division—indicated as train-service accidents—is made up of accidents in which the damage to railway property, including cost of clearing wreck, is $325 or less (1952 definition). In the great majority of such accidents, little or no damage to railway property is involved. They represent, for the most part, accidents or mishaps to persons as distinguished from accidents to trains, locomotives, or cars.

However, the movement or operation of equipment is in some way involved, directly or indirectly, in these accidents. A check of the subheadings under this division indicates what they consist of: Coupling or uncoupling cars or locomotives and air hose; operating locomotives, handbrakes on cars, and switches; coming in contact with fixed structures while riding on locomotives or cars; getting on or off cars or locomotives; accidents at highway grade crossings where the damage to railway property is $325 or less; and struck or run over at places other than public crossings. In 1952, 63.3 percent of total employee fatalities and 54.4 percent of total employee injuries fell in this group of accidents, while in the case of passengers all of the fatalities and 86 percent of the injuries fell in this category.

The third division, that is, so-called train accidents, covers those accidents in which the damage to railway property, including the cost of clearing wreck, is more than $325. This division includes such major accidents as collisions, derailments, and locomotive-boiler accidents. In 1952 it included 15.6 percent of the total employee fatalities, 2.4 percent of the employee injuries, none of the passenger fatalities, and 14 percent of the passenger injuries.

It is thus clear from examination of tables I through IV that the bill here under consideration could under most favorable circumstances affect only a relatively small number of the casualties resulting from railroad accidents. In evaluating the merits of this bill, therefore, railroad managements must take into consideration not only the possible benefits it might produce but also the new hazards which it would undoubtedly create. The railroads unqualifiedly believe that this bill, if enacted into law, would, through the resultant division of responsibility, introduce unsafe operating conditions far in excess of any benefits it could conceivably produce.

Summarizing the statistics on tables I to IV, there were 2,926 fatalities in 1952 to persons of all classes in railroad accidents of all kinds (table I). Of that number, 999 fatalities were to persons unlawfully on railroad premises; 1,375 were to persons in highway grade-crossing accidents. Eliminating those classes of fatalities leaves only 552, of which 352 were employees, 12 were passenger, and 188 were other nontrespassers.

Of the 352 employee fatalities in 1952, 74 were in nontrain accidents and 223 were in train-service accidents, none of which would appear to be due to causes which this bill is designed to correct. Thus, only the 55 fatalities in train accidents remain for further analysis, which I shall discuss at a later point.

Of the 12 passenger fatalities, 7 occurred to passengers while getting on or off cars, while the circumstances of the remaining 5 were such that the facts could not be fully determined. However, it was entirely clear that those 5 fatalities did not result from accidents to the trains on which they were riding.

Of the 188 fatalities to other nontrespassers, the great bulk of those resulted from being struck or run over by trains at places other than highway grade crossings.

Table V shows the trends over a period of years in casualties to employees on duty in train accidents, measured in terms of locomotive-miles operated. The trends are similar to those shown in table II which covered casualties to employees in accidents of all kinds. The marked downward trend in casualty rates in the postwar period to date is substantially the same on the two tables, indicating that the improvement in employee safety since the end of the war has extended to the more serious kinds of accidents such as collisions and derailments.

Table VI gives a breakdown of casualties in train accidents in 1952 to employees on duty and to passengers on trains, by principal causes of accidents. These, presumably, are the kinds of accidents the bill was designed to prevent. The causes of train accidents are segregated into four principal groups, with a number of subclassifications. The four major groups are negligence of employees, defects in or failures of equipment, defects in or improper maintenance of way and structures, and miscellaneous.

About 82 percent of the employee fatalities in train accidents in 1952 were the result of negligence of employees. As stated above, there were no fatalities in 1952 to passengers on trains in train accidents.

The railroads are striving to get as close to 100-percent observance of operating rules by employees as it is possible to attain. Unfortunately, it is questionable whether this will ever be reached irrespective of how perfect the rules may be or the amount of regulation imposed upon the industry. Only in the perspective of the true magnitude of the railroad operation with its daily movement of thousands of trains and millions of switching movements involved in makeup and breakup of trains can the real scope of the safety problem and the accomplishments in accident prevention over the years be really appreciated. It involves close detailed knowledge of on-the-ground operations as the basic requirement of such achievement.

In any event, it is clear from examination of table VI that the causes of casualties to employees and passengers in train accidents are such that the provisions of S. 539 would have little, if any, bene-

ficial effects. Accidents due to equipment failures and the defects in way and structures have been so reduced that the safety problem on the railroads today is one largely of obtaining maximum observance of rules. No legislation can do more than is now being done by the railroads to that end, and this bill, with the divided responsibility which it engenders, would impair, rather than improve, the understanding and observance of operating rules.

What the railroads fear most is that in shifting responsibility for safe operation partly from the shoulders of railroad management, as this bill would do, would lead to more accidents rather than to fewer.

The Bureau of Safety, Interstate Commerce Commission, investigates and issues reports on serious railroad accidents. I have been through the reports issued by the Bureau of Safety and table VII summarizes the principal causes of the accidents investigated during the 3-year period ended June 30, 1952. Reference to this will indicate that as in the past the greater number of the accidents investigated were due to employee negligence. Adding to these the number caused by defects in or failure of equipment, defects in or improper maintenance of way and structures, highway grade-crossing accidents involving motor vehicles, and miscellaneous accidents involving track and structures, leaves only a small number classified as miscellaneous accidents involving operating conditions and practices not elsewhere classified.

Table VIII provides a further comparison in its breakdown of the accidents charged to employee negligence and those due to miscellaneous operating conditions and practices. In the matter of employee negligence this problem is largely, if not wholly, one of observance of operating rules by employees. As to the miscellaneous cases, in only a minimum is there indicated failure to provide adequate safeguards.

In conclusion, I again call the attention of the committee to the marked improvement that has taken place in the past 30 years in the safety of railroad operations. The continuing downward trend in accidents and casualties was temporarily halted during the war period, due to the large number of inexperienced employees in service at that time and to the very heavy volume of war traffic being handled. However, since the end of the war the steady downward trend in accident and casualty rates has been resumed, and the railroads are being operated today more safely than at any time in their history. There is every likelihood that this favorable trend will continue, due to the large expenditures that the railroads have made since the end of the war, and are continuing to make, for new equipment and other facilities.

In the light of these facts, together with those brought out by preceding witnesses, it appears that there is no need for legislation of the kind here under consideration.

Senator POTTER. Mr. Mumford, you have had a great deal of experience in safety work with the railroads. Would you say that the Interstate Commerce Commission has acted fairly or unfairly in administering the Safety Appliance Act and the Hours of Service Act?

Mr. MUMFORD. We have always had the greatest respect for the Commission, sir.

Senator POTTER. They have administered those programs fairly?

Mr. MUMFORD. We feel they have done a remarkably good job.

Senator POTTER. Have you noticed any undue or unreasonable interference on the part of the ICC as it relates to the management of the railroads? Have they interjected themselves into the management of the railroads?

Mr. MUMFORD. Insofar as my work is concerned, I would say not. I don't know what management's position might be on that.

Senator POTTER. Do you have any questions?

Senatore PASTORE. This is a question I would like to put to Mr. Mumford. It appears to me that the industry and the ICC on this particular bill are miles apart, not in purpose but really in what is contained in this bill.

As I understood from Mr. Preston this afternoon, before we adjourned, much of the law contained in this bill, S. 539, particularly now with reference to page 2, is presently the law.

Mr. MUMFORD. That is correct.

Senator PASTORE. And that we are adding here, "Telegraph, telephone, radio, inductive, or other wayside and/or train communication systems." Will you admit that much of the material contained in the parenthesis here could have a lot to do with the safety of a train or could be employed——

Mr. MUMFORD. You mean, the part that is already in effect?

Senator PASTORE. No, what is included here. It says here, "(1) To install the block-signal system, interlocking, automatic train-stop, train-control, and/or cab-signal devices, and/or other similar appliances, methods, and systems intended to promote the safety of railroad operation." That is already in the law, and the Commission has jurisdiction over it.

As a matter of fact, it even has the right to make rules and regulations appertaining thereto. Now they have added in here, "Telegraph, telephone, radio, inductive, or other wayside and/or train communication systems." That, like a block-signal system, could have much to do with the promotion of safety on a train; am I right or wrong?

Mr. MUMFORD. Indeed, you are right.

Senator PASTORE. What would be the objection in including that, too, in the present law?

Mr. MUMFORD. There is some objection, naturally, on the part of management because we have had the telegraph and telephone systems for so many years without any semblance of control and they have been entirely successful.

Senator PASTORE. That may be so. But beyond that I think you have the general objection in principle that you don't want anything added on to it. Apart from that, I don't see any harm, sitting here as a person who has to decide between these two schools of thought, in having it included, because if the block-signal system can be under the control of the Commission, why can't a telephone, telegraph, radio, inductive, or other wayside and/or train communication systems be included also? I don't see any harm in that. Either put it all in or throw it all out.

Mr. MUMFORD. The matter of a communication system where telephone and telegraph is involved is a matter very, very closely linked to successful operation.

The matter of economy is in here, too, from the railroad standpoint, and the railroad necessarily is the only power, we believe, which can

determine adequately for the success of its operation just where a telegraph operator may or may not be needed, where telephone installation may or may not be needed. That all enters into the economy.

Senator PASTORE. The ICC passes upon your rates. They will not make any undue imposition on you that will cause another rate hearing.

Mr. MUMFORD. I don't see where rates are involved.

Senator PASTORE. They are not involved here, but it all comes under the jurisdiction of the ICC.

Mr. MUMFORD. I am talking about all the installations.

Senator PASTORE. I know that. But the point of the fact is that you are making the argument that the reason why you are objecting to having it included is that it might involve the matter of cost.

Mr. MUMFORD. Cost and operation. Safety is involved in operation in many phases.

Senator PASTORE. Wouldn't you say that the ICC is not going to make any imposition that is going to run into added costs, which is going to run into new applications for increase in rates? You are dealing with a body that is as much interested in costs as I think you are, because it is all going to funnel down to the ultimate problem of how much you are going to pay for a ride on a train.

Mr. MUMFORD. There I think I would have to refer you back to Mr. Preston's testimony concerning the management's particular stand.

Senator PASTORE. I am not trying to argue with you, Mr. Mumford. I am trying to see how far apart we really are in the purpose of this bill. I think myself that when you make the argument that you don't want the ICC to get into train operations you are right. I go along with that argument. I agree with that. But all the ICC, as I get the testmony here, unless I have been deceived in some way or I misunderstand it, is trying to include within the province of the things they now control with reference to safety is this element of telegraph, telephone, radio, inductive, or other wayside and/or train communication systems, the material in the parentheses here.

Now, if we could write language which will not only include that but will show that the control of the ICC will have to be over the installation and maintenance of this safety equipment, without getting into the idea of schedules and running your trains, I think that we have at least reached a point between the two schools of thought that could be brought about as a compromise.

Mr. PRESTON. Mr. Chairman, I think that the question now being asked, in part, related certainly not to an intentional misleading of the committee in my presentation earlier in the day but to an omission on my part in failing to call attention to a provision now in the law, which points up the objection that the railroads have to the inclusion of telegraph and telephone as distinguished from radio within the terms of the present law.

That feature is this. I did not read sufficiently far into section 25 of the act as it stands today. There is a proviso with respect to the rules and regulations which you speak of pertaining to these installations, reading this way: "That such carrier may from time to time change the rules, standards, and instructions herein provided for, but such change shall not take effect and the new rules, standards,

and instructions be enforced until they shall have been filed with and approved by the Commission."

Senator POTTER. What is your reference?

Mr. PRESTON. That is a proviso in section 25 of the Interstate Commerce Act.

Mr. JELSMA. What page?

Mr. PRESTON. In this compilation I have, it is page 110. The point with respect to the telephone and telegraph is that those systems, as a practical matter, do require frequent change and adjustment to meet seasonal changes in traffic, sudden occasions resulting from flood or what not, and the inclusion of these provisions as to the Commission for prior approval as to change to any of those installations is calculated to freeze the situation and hamper railroads in making proper adjustments.

Senator PASTORE. That is why I think, Mr. Preston, we are miles apart. I don't think telephone and telegraph in this particular section is meant to mean what you are talking about. This is telephone and telegraph only as it has to do with the promotion of safety in railroad operation. It has nothing to do with the telephone and telegraph you may have in your administrative office.

Mr. PATTERSON. Under the situation these changes could be made any time by the carriers themselves just as long as they filed the amended rules with the Commission within 30 days.

It is entirely at their discretion to make these changes, if they file the changes with the Commission within 30 days. It isn't something that they couldn't change promptly if they wanted to.

Mr. PRESTON. I just read the language of the statute which seems to be at a little contrary purpose, may it please the committee.

It says that the carrier—

> may from time to time change the rules, standards, and instructions herein provided for, but such change shall not take effect and the new rules, standards, and instructions be enforced until they shall have been filed with and approved by the Commission.

The point with respect to the telephone and telegraph is that it doesn't have to do with the telephone from an administrative office in the Association of American Railroads to the headquarters of the Santa Fe in Chicago. The place where the adjustments are required are in your telephone and telegraph installations which do pertain to the actual operations of these trains and do bear upon their safe operation under changing conditions.

It is the freezing effect of this bill upon those two classes of installations which gives rise to our principal objection.

Senator PASTORE. I would like to know what Mr. Patterson has to say to that.

Mr. PATTERSON. Page 4 of the exhibit entitled, "Revised Changes Underscored," attached to my statement, it is a revised exhibit of S. 539, states:

> Each carrier shall file with the Commission its rules and regulations for the operation of trains in connection with the devices, applicances, methods, and systems covered by this section within three months after the enactment of this amendatory provision and shall thereafter file with the Commission any revision, amendment, or modification of such rules and regulations within thirty days after the effective date of such revision, amendment, or modification.

That also appears in the act itself.

Senator PASTORE. Yes; but they couldn't make the change until you passed upon the amended rules that they filed.

Mr. PRESTON. The confusion there is the same confusion I tried to clear up this morning, sir, of not distinguishing between the two plainly divisible sections of this bill.

What Commissioner Patterson has just read pertains to what we spoke of this morning as coming in the enumerated second provision of the bill having to do with rules for the operation of trains. But this telegraph and telephone provision is in the prior portion of the bill, and the provision there with respect to the rules, standards, and instructions for the installation, maintenance, and repair of those things falls under the provision which I have just read, and they may not be changed without the prior approval of the ICC. The same would apply to interlocking, and all of the other installations referred to in that installation portion of the bill.

Senator POTTER. In other words, under existing law you have to submit your rule to the Commission before you can change your block signal system?

Mr. PRESTON. And make no change in that without the prior approval.

Senator POTTER. And according to the amendment that we have under consideration, the same thing would apply to telephone and telegraph?

Mr. PRESTON. That is quite correct.

Mr. PATTERSON. Mr. Chairman, under the printed copy of S. 539, page 5, commencing with the first complete sentence——

Senator POTTER. What is that?

Mr. PATTERSON. That is the printed copy I have, on page 5, commencing with the first complete sentence—

> Each carrier shall file with the Commission its rules and regulations for the operation of trains in connection with the devices—

of course, that "trains" may come out—

> appliances, methods, and systems covered by this section within 3 months after the enactment hereof, and shall thereafter file with the Commission any revision, amendment, or modification of such rules and regulations within 30 days after the effective date of such revision, amendment, or modification.

That is to give them an opportunity to make any emergency changes that they care to make with respect to the devices enumerated in the bill.

Senator PASTORE. What if you overruled the modification?

Mr. PATTERSON. If we made an investigation and found they weren't safe to operate that way, we would perhaps require them to change it.

Mr. PRESTON. Now, Mr. Chairman, if I may be indulged once more, I submit, with all the profound respect which I do sincerely hold for Commissioner Patterson, that he is evincing a complete misunderstanding of the Commission's own proposed bill.

The language which he has just read again pertains not to the installation feature of the bill but to the operating rules feature of the bill. As to installations, the pertinent provision is found on page 4, beginning at line 18:

> that such carrier may from time to time change the rules, standards, and instructions herein provided for, but such change shall not take effect and the new rules, standards, and instructions be enforced until they shall have been filed with and approved by the Commission.

It is a freezing provision.

Mr. PATTERSON. That is true with respect to these added devices.

Mr. PRESTON. Including telephone and telegraph?

Mr. PATTERSON. Yes. Those installations are already in. There is no change to be made with those. They are already in. With respect to those devices, you would file your specifications, subject to approval, to the Commission.

Mr. PRESTON. Then would you agree there is no point in having them in the bill?

Mr. PATTERSON. There is no point of having them in the bill—I wouldn't agree to that, because they are not in the bill.

Mr. PRESTON. Your amendment proposes to put them in.

Mr. PATTERSON. Yes. The only thing you would have to do is file your specifications with respect to these various devices, telephone, telegraph, radio, inductive or other wayside and/or train communication systems. They are already in. You would file your specifications with respect to those.

Mr. PRESTON. And then any modifications in them would be frozen in the absence of the prior approval of the ICC to make any substantial change.

Senator POTTER. Could I ask a question, Mr. Patterson? If they are already in, and we have had no testimony here to the contrary, then why would you want them to file specifications? Why is that essential?

Mr. PATTERSON. So we will know what they are. It is only to know what they are. So we could examine the specifications to see if we found anything in those specifications that might be dangerous from the safety standpoint.

Senator POTTER. Have you any evidence at all that their specifications are not up to standard?

Mr. PATTERSON. We have not. But when signals were included originally in the bill, the same provision was made there. All their specifications were filed. The Commission found some objection to them. So they went into conference with the railroads, and it finally came up with an order that it was satisfactory to all concerned, including the Commission, and we approved them subject to that order. That is what would be done here.

Senator POTTER. Mr. Mumford, I am sorry we have left you here at the altar, so to speak.

Mr. MUMFORD. I am enjoying myself.

Senator PASTORE. Are you getting more and more confused, as we are?

Senator POTTER. Are there any questions you would like to ask Mr. Mumford, Senator Monroney?

Senator MONRONEY. Leaving out this part of approval by the Commission, Mr. Mumford, would you feel that would correct one of the big deficiencies of the bill, or leaving out the telephone and telegraph, which is now an established part of the dispatching system?

Mr. MUMFORD. I think leaving out telephone and telegraph would certainly correct a glaring deficiency in the first part of the bill; yes, sir.

Mr. PATTERSON. I might point out, Mr. Chairman, at no time have the railroads, or the Association of American Rialroads, offered any constructive criticism of any bill that we have submitted. They

have come here saying to you that they just want no change of any kind. They hatch up one argument after another to prevent any kind of a change.

Senator PASTORE. You are not surprised at that?

Mr. PATTERSON. I am not surprised at it, but I am telling you what the situation is.

Senator POTTER. I don't know if we could enter into that field of discussion today. If there are no further questions, Mr. Mumford, we want to thank you for your testimony. We stand adjourned.

(Whereupon, at 3:45 p. m., the committee adjourned.)

UNITED STATES SENATE,
OFFICE OF THE MINORITY LEADER,
Washington, D. C. April 17, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Interstate and Foreign Commerce Committee,
United States Senate.

DEAR SENATOR: I transmit herewith a letter from Mr. J. T. Suggs, vice president and general counsel of the Texas & Pacific Railway Co., Dallas, Tex.

Sincerely,

LYNDON B. JOHNSON.

THE TEXAS & PACIFIC RAILWAY CO.,
Dallas 2, Tex., April 16, 1953.

In re S. 1401—ICC Control of Railroad Power Brakes; S. 539—ICC Control of Railroad Operating Rules.

Hon. LYNDON B. JOHNSON,
231 Senate Office Building,
Washington, D. C.

DEAR LYNDON: Please let me submit to you as briefly as possible my views with respect to the captioned measures which are pending before your Committee on Interstate and Foreign Commerce. With the thought that you may maintain separate files on such bills, I am writing this to you in duplicate.

Unquestionably the power brake bill (No. 1401) was inspired by the spectacular but nonfatal accident in the Washington Union Station a few weeks ago. This is really a little puzzling to some of us. You will recall that not very long ago a couple of buses got together head on near Waco with horribly tragic results. The public was shocked, sympathetic, but no one seemed seriously inspired to pass a law. When airliners crash and snuff out lives there is public shock and sympathy, but no legislative inspiration results. Our industry has a spectacular freak accident, without any loss of life, and somebody wants to pass another law which will hamstring us further in our already overregulated operation of railroad trains.

S. 539 is considerably worse than S. 1401. It would give a governmental agency minute control over all of our railroad train operations. Necessarily, railroad management has full responsibility for those operations, and neither the regulatory agency nor certain railroad brotherhoods who favor this bill seem disposed to assume that responsibility. All they want is to direct the managers in precise detail as to just how that responsibility shall be discharged in actual operation out on the railroads. Sponsors of this bill may deny that it would have the effect charged, but we have had a good deal of practical experience with regulatory measures couched in general and all-inclusive terms.

I hope that you got to hear the testimony of Mr. Thomas L. Preston before your committee in connection with both of these bills last Tuesday, and I hope you can follow his recommendations. To my knowledge, Tom Preston is a levelheaded man of temperate expression who knows what he is talking about in connection with the railroad industry. I would also commend to your attention the testimony of Messrs. Gurley and Shoemaker.

Both of these bills are being pushed under the guise that they are "safety" measures. They constitute further detailed regulation of the operations of what is already far and away the safest form of public transportation. In this con-

nection, let me direct your particular attention to the tables introduced by Mr. Mumford, safety manager of the New York Central.

I sincerely hope that you will oppose the passage of these bills. It is really regrettable that such legislative piranha as these keep us in the railroad industry so busy opposing legislation that we have inadequate time to prepare and submit to you legislation we would like to support, which we sincerely believe would be in the public interest in bringing our transportation policy up to date.

With kindest regards, I am

Sincerely yours,

TOM.

BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEMEN,
Washington 4, D. C., April 14, 1953.

Mr. W. D. JOHNSON,
Vice President-National Legislative Representative,
Order of Railway Conductors, Washington 24, D. C.

DEAR SIR AND BROTHER: I have read the statement you have prepared for presentation before the Senate Committee on Interstate and Foreign Commerce urging passage of bills S. 539 and S. 1401, having to do with safety on the railroads.

I concur in everything you have said regarding these proposals and hereby authorize you to inform the committee that I have authorized you to also speak for me in urging this legislation's enactment, as well as for the Brotherhood of Locomotive Firemen and Enginemen, which organization I represent.

With best wishes and kindest regards,

Yours fraternally,

JONAS A. MCBRIDE.

STATEMENT SUBMITTED ON BEHALF OF SOUTHERN PACIFIC CO. IN OPPOSITION TO S. 1401, 83D CONGRESS

The following statement prepared by and under the direction of Mr. B. M. Brown, general superintendent of motive power, Southern Pacific Co., San Francisco, is submitted on behalf of that company for incorporation in the record of the hearings of the Senate Committee on Interstate and Foreign Commerce, conducted on April 14–15, 1953, as setting forth in general the reasons why S. 1401 should not be enacted.

Southern Pacific Co. is one of the major interstate railroad systems of the United States. With its affiliated and subsidiary companies, it operates approximately 15,000 miles of railroad extending from St. Louis and New Orleans across Missouri, Arkansas, Louisiana, Texas, New Mexico, Arizona, and California to Los Angeles and San Francisco and northward along the Pacific coast to Portland, Oreg., with a line extending eastward from San Francisco across Nevada to Ogden, Utah.

The Southern Pacific System lines west of El Paso, directly operated by Southern Pacific Co., consist of approximately 8,300 miles of railroad. On these lines the company operates some 1,480 locomotives, both diesel and steam power. It owns approximately 57,000 freight cars of various types and 1,320 passenger cars, besides having an interest in sleeping cars owned and operated by the Pullman Co.

REVIEW OF REPORTABLE ACCIDENTS TO INTERSTATE COMMERCE COMMISSION

Review of the record of accidents reportable to the ICC under existing instructions during the 5-year period 1948 to 1952, inclusive, is attached as a statement consisting of 6 sheets, Nos. 1 to 6, inclusive. Sheet No. 1 is a summary sheet of the 5-year period; the succeeding sheets, 2 to 6, represent individual years 1948 through 1952. The detail of each year is shown on the individual sheet.

These statements exclude collisions chargeable to yard-switching operations, since these do not occur in train operation where power brakes are used.

COLLISIONS

These statements show that there were no collisions during the 5-year period caused by failure of power brakes.

DERAILMENTS

Of the total derailments on the Southern Pacific, 1,028 in number, shown for the 5-year period, only 8 were chargeable to failure of power-brake system.

During this 5-year period, 9,411,852,929 transportation car-miles were operated.

The 8 derailments computed against the total transportation car-miles show a frequency of about 0.08 per 100 million car-miles, or 1 for every 1,150,000,000 car-miles. This frequency is so small as to be practically negligible.

There were no employee casualties of any kind involved in these eight derailments.

This record demonstrates the effectiveness of the present rule applying to power brakes as prescribed and enforced by the railroad company.

The annual report of the Bureau of Safety of the ICC, covering fiscal year ending June 1952, shows that test of airbrakes on trains departing from terminals had 99 percent of the cars controlled by air on Southern Pacific, and on test of airbrakes on trains arriving at terminals 98 percent of the cars were controlled by air.

Considering the enormous number of cars operated, each of which is equipped with an independent powerbrake, and which, during the year 1952, accumulated 2,002,562,409 transportation car-miles on the Southern Pacific, this near-perfect percentage demonstrates the high degree of maintenance of airbrakes, and unremittive and effective enforcement of airbrake rules on cars operated over the Southern Pacific.

It is noted from the ICC report that these percentages are generally the same for all railroads and indicates a generally sound condition relative to airbrake inspection and maintenance throughout the country.

To illustrate further the continual and progressive action taken by the Southern Pacific in developing and adopting improvements in powerbrakes, and revising airbrake rules to improve safety of operation and conform to these improvements in airbrakes, there follows on pages 4 to 19 a review of testing and research facilities available, a history of improvements in airbrakes, equipment design, and rules.

Experienced and well-trained railroad men are better qualified and more interested in improving powerbrake systems, and establishing rules to insure safety in train operation, than could possibly be expected from regulatory bureaus if they were given authority over these matters.

RESEARCH AND TESTING FACILITIES MAINTAINED BY OR AVAILABLE TO THE RAILROADS

The development of adequate powerbrakes for use on railroad equipment has required a large amount of research and development work which to a large degree has been done by the airbrake-manufacturing companies in their well-equipped laboratory and testing rooms located principally at Wilmerding, Pa. (Westinghouse Air Brake Co.), and at Watertown, N. Y. (New York Air Brake Co.).

The Westinghouse Air Brake Co. has always made available to the committees of the association their great fund of information available in their testing laboratories, and numerous meetings of the Air Brake Committee have been held at Wilmerding where testing racks and demonstrations are available. The Westinghouse Air Brake Co. now offer instruction classes for railroad employees in connection with airbrake maintenance and operation.

The practical service trials of these devices have been conducted in the field by the several railroads cooperating together, and with the manufacturers and with the Bureau of Safety, a major accomplishment in this respect being the series of brake tests made in 1908 jointly by the Southern Pacific and Westinghouse Air Brake Cos. in connection with brake equipment on locomotives, freight cars and passenger cars, and in 1928–31 on Southern Pacific's Siskiyou Line in cooperation with the Air Brake Co., the Association of American Railroads, and the Bureau of Safety, which culminated in the approval of the association of the present airbrake specifications and what is now known as the AB brake with which freight cars are now generally equipped. Southern Pacific Dynamometer car, which is in effect a traveling research laboratory, was used in these tests along with Dynamometer cars of other railroads.

The maintenance of the airbrake on all types of railway equipment is the responsibility of the individual railroads, not only on cars of their ownership but also the equipment of other railroads, that may be currently operating over their property. This includes daily inspection as well as the periodic inspection prescribed by the rules.

In order to accomplish this maintenance, periodic tests are required during which airbrake equipment in some cases can be tested on the car or locomotive, while in

other instances it must be removed and tested on appropriate and prescribed testing racks. These testing racks are located at the following points on Southern Pacific:

Station	Freight cars	Passenger cars	Locomotives
Sacramento, Calif	X	X	X
Los Angeles, Calif	X	X	X
El Paso, Tex	X	X	X
West Oakland, Calif	X	X	X
Roseville, Calif	X		X
Ogden, Utah	X	X	X
Brooklyn	X	X	X
Bayshore, Calif	X	X	X
Bakersfield, Calif	X		X
Tucson, Ariz	X	X	X
Sparks, Nev			X
Dunsmuir, Calif			X
Eugene, Oreg			X

This operation requires cleaning, inspection, and replacement of parts worn beyond certain limits, not only the airbrake apparatus but the brake cylinder and related parts and upon reapplication final testing must be made on the car or locomotive to insure proper operation. Certain marking and stenciling is required on the car to show that the work has been done within the calendar periods and on locomotives, cards, stenciling, or tags must be displayed to so indicate.

When cars on repair tracks have other maintenance preformed, airbrakes are tested to see that they are functioning properly even though they are within the prescribed periodic maintenance periods. On locomotives a daily or trip inspection is required to see that the brakes are functioning. This is carried down further to terminals where departure tests are required of assembled trains to see that brakes are functioning properly and that related brake apparatus from the brakeshoes on up are in good operating condition.

Close cooperation has always been exercised among the railroad companies and with the Association of American Railroads; between the railroad companies and the airbrake manufacturing companies, and between the association and the airbrake manufacturing companies to take advantage of developments evolving from the inventive minds of experienced railroad men and manufacturers' personnel as occasion brings them forth and where they are proven practical and can be worked in to advantage and coordinated with the existing equipment. This has been the process of development since the railroads were first established and will continue to be so because of the progressive and imaginative minds of railroad employees and supervisors and management and those associated with them in supplying such equipment.

HISTORY OF IMPROVEMENTS IN AIRBRAKES

Progress in airbrakes on railroad equipment from its original development in 1869 by George W. Westinghouse, has been rapid, particularly since the turn of the century. The year 1869 is notable in history not only of America but of the Southern Pacific as in that year the golden spike was driven connecting the Central Pacific with the Union Pacific at Promontory Point, Utah, linking the first transcontinental rail line in the United States. The ability to control the stopping of trains has, in a large measure, contributed to the success of present-day handling of long and relatively high-speed freight trains and the high operating speeds of modern passenger trains.

The term "airbrakes" includes any brake operated by air pressure but usually is restricted to systems of continuous brakes operated by compressed air as generally used in American railway practice, in distinction from vacuum brakes, which are operated by creating a vacuum. The air is compressed by some form of pump on the steam locomotive, or by a motor compressor on electric or internal-combustion locomotives or cars, and is conveyed by pipes and flexible hose between the cars to cylinders and pistons under each car, by which the pressure is transmitted to the brake levers, and thence to the brakeshoes.

The straight airbrake is the original form of the Westinghouse airbrake, developed by George W. Westinghouse in 1869. With this form of brake, the compressed air is used as a direct force from the main reservoir supply of the

locomotive, through direct piping to the brake cylinders on each car to apply the brakes. The valve on the locomotive is used to admit air to the brake pipe and brake cylinders in order to apply the brakes, to hold it there when admitted, and to exhaust it when desiring to release the brakes. This form of brake was superseded by the plain automatic airbrake and is now rarely used except on some electric railway cars and some highway equipment.

While this type of brake was an improvement over what was formerly available, it had inherent faults that made it necessary to effect immediate improvement. These improvements resulted in the automatic airbrake which is designed so that the brakes will be applied automatically in case air escapes from the system. To accomplish this there is added to each car an auxiliary reservoir, in which is stored a supply of compressed air sufficient to operate the brake on that vehicle, and a triple valve to which the brake pipe, auxiliary reservoir and brake cylinder are all connected.

The brake is applied by reducing pressure in the brake pipe below that in the auxiliary reservoirs. Such a reduction is caused by an opening made from the brake pipe, or its connections, to the atmosphere, and may be intentional, as when the engineer or trainmen open the brake pipe to the atmosphere through the brake valve; or accidental as in case of a burst hose or broken pipe. The reduction in brake-pipe pressure thus made destroys the equality of brake pipe and auxiliary reservoir pressures which existed when the brake system was fully charged, and the auxiliary reservoir pressure, being then higher than that in the brake pipe, causes the triple valve on each car to operate so as to apply the brakes by admitting compressed air from the auxiliary reservoir to the brake cylinder, where it exerts its pressure on a piston, pushing it outward and thus applying the brakes. This system was developed in 1872.

Some 15 years later it was further improved by what is called the quick-action feature and again in 1905 developed into what is generally known as the quick-action automatic brake which had the K-type triple and adopted by the American railroads.

With the general increasing of train lengths and weights further improvement was required in this type of brake and it appeared that an entirely new type of brake must be developed that would incorporate many new and desirable features and would operate in connection with the existing brake during the transition period. This development required a lot of research on the part of the brake companies and the railroads and resulted in a series of laboratory and test rack investigations and final road tests with trains over the most difficult territory available and in which the Southern Pacific participated with the association and brake manufacturers during period 1928–31 in a series of tests over our Siskiyou line as previously stated.

These tests developed that further improvement in the brake apparatus offered was necessary and these changes were made and after further test rack investigations at the manufacturers, cars were equipped and road tests made by the Pennsylvania and Chesapeake & Ohio in 1933 and 1934. These resulted in adoption of the A. A. R. specification for airbrakes in 1933 and rules required that cars built after September 1, 1933, should have this brake and also provided for equipping existing cars within a specified time.

Progress made in equipping interchange cars is illustrated on attached chart, exhibit A.

The AB brake as designed was not perfect and numerous changes had to be made after the brakes were placed in service, particularly those causing leakage during severe cold weather. These changes were made at substantial expense to the railroad companies and illustrate the cost of development on apparatus of this kind after the device is supposedly considered perfected in installations.

The application of this type of brake by the railroads to existing equipment also resulted in enormous expenditures.

Improvement in passenger train car brakes have kept pace with improvements in freight car brakes, in fact they have progressed more rapidly because of the great importance of the service and the higher speeds in passenger train operation. The original automatic P triple with its limited functions resulted in development of the LN brake and finally the UC or universal control valve, both of which incorporated substantial improvements in braking power, the universal brake having separate service and emergency portion and control features. With the advent of modern streamline trains the brake was further modified to the high speed control valve designated HSC to which electric pneumatic features could be applied by which the application and release impulses are electrically controlled rather than being dependent upon the action through the brake pipe.

A recent development in braking of passenger cars has been the "off the wheel" or disk brake which removed the brake shoes and braking effort from the tread of the wheel and transfers it to a disk fastened to the wheel hub. This brake has proven very popular and overcomes some of the difficulty experienced with heat checks developing in wheels some of which have resulted in breakage and accidents.

Another feature of modern passenger car braking is the wheel slip control which prevents wheels sliding in severe or emergency applications as it compensates for the momentary stopping of the wheel from revolving by reducing the pressure of the brake shoe on the immediate wheel. Automatic sanding operations have also been used to some extent in braking passenger trains to insure near perfect rail conditions.

Locomotive brakes required improvement along with the freight and passenger car brakes in order to properly control the train. The No. 6–ET brake developed and tested in the early 1900's was in recent years superseded by the No. 8–ET to which electropneumatic operating featues could be added. This was the latest brake used on steam locomotives in both freight and passenger. With the advent of the diesel locomotive it was necessary to retain these control features and have a brake that would work in conjunction with the dynamic baking of the diesel. This resulted in the 24RL equipment which is now the standard type of equipment of the diesel locomotive. The dynamic brake on diesels is a valuable feature in controlling down grade operation in order to take the punishment off the wheels of the train and eliminate the use of retaining valves on cars with the exception of extremely heavy grades and with consequent safety in avoiding wheel damage and possible breakage and the necessity of stopping trains for cooling and inspection of wheels on heavy grades which was necessary with retaining valve operation.

The Southern Pacific, as previously mentioned, has participated substantially in the development of airbrake equipment, principally through an elaborate series of tests conducted in 1908, with the Westinghouse Air Brake Co. and in 1928–31 during the development of the AB brake.

The development of the airbrake has been concurrent with the development of railway equipment in general, and to illustrate the progress made in design and strength of equipment owned by the Southern Pacific Co. attached are four exhibits, as follows:

Exhibit B: Chronology of freight boxcars, years 1900–52, showing design and capacity characteristics.

Exhibit C: Chronology of passenger coach and chair car, years 1900–52, showing design and improvements.

Exhibit D: Chronology of freight locomotives, Pacific lines, years 1899 to 1952, showing improved design and increased tractive effort.

Exhibit E: Chronology of passenger locomotives, Pacific lines, years 1895 to 1952, showing improved design and increased tractive effort.

These exhibits illustrate primarily:

The increasing volumetric and tonnage capacity of freight cars, particularly in the improved ratio of load to empty weights.

The increase in length of individual passenger cars and the improved ratio of weight per foot of length which has been possible through the use of high tensile stainless steel, and aluminum in construction.

The increase in size and tractive effort of locomotives, both passenger and freight service.

These factors not only show improvements as indicated but also in the case of passenger cars and freight cars show the strength of the equipment over a period of years to prevent failures in service and provide safe transit of goods and passengers and likewise protect the safety of employees engaged in train operation.

Concurrent with these improvements in strength and design has been the refinement and development of the airbrake which has been enumerated in prior statements. In the case of freight cars, exhibit B, it will be noted that the type H triple was superseded by the type K and later by the AB brake and that the brake beams and related parts and the foundation brake rigging have been improved along with the progress made in improvements of the airbrake operating apparatus.

The condition of freight cars throughout the country has been substantially improved with the addition of new cars during the postwar period and the substantial retirement of older cars that were continued in service throughout the war years. This general improvement has substantially reduced the opportunity for accidents particularly so with regard to power brake apparatus and foun-

dation brake rigging, improved wheels, couplers and draft gears, and similar parts that go to make up the through connection between the locomotive and caboose.

Progress in freight car construction is graphically shown on attached exhibit F entitled "Comparison of freight cars, all steel, steel underframe, and of other construction."

This shows since the advent of the steel underframe car in 1903 and increasing use of steel in underframes, center sills, and complete car construction, the wooden car is practically nonexistent on Southern Pacific. The all-wood underframe car is prohibited in interchange by the association.

Likewise on passenger cars, exhibit C, there has been a marked change in airbrake equipment and foundation brake rigging from the single brake beam to the clasp brake to the disk brake and from the P triple to the LN to the UC to the HSC and the electric pneumatic brake apparatus. The strengthening of the cars from the first all-steel car built by Southern Pacific lines in 1906 in their Sacramento shops to the present-day high-tensile stainless steel and aluminum passenger car has been a great change in car design and construction and the airbrake development has kept pace with these improvements so that now the modern passenger train is accurately controlled and safely operated especially insofar as power-brake apparatus and foundation brake rigging and related parts are concerned.

For locomotives, both freight and passenger, shown on exhibits D and E, increasing tractive power to meet modern-day train-handling requirements has kept pace with the strengthening of cars. Improvements have also been made in power brake to correspond and in order to secure accurate control of the train braking. This has progressed through the 6ET to the 8ET equipment and now to the 24RL for diesels. The latter change is adaptable to both electric pneumatic control and dynamic brake coordination. These features in locomotive design give the engineer accurate control of power braking on trains and with the improved brake apparatus on cars gives him control of the service and emergency features at will.

Historic Review of Airbrake Rules

SOUTHERN PACIFIC CO. RULES

Rules formulated by the Southern Pacific have been in effect for many years. The oldest issue available now is dated July 1, 1909. These rules were issued in booklet form to employees, entitled "Southern Pacific Co. (Pacific Lines) Rules and Regulations Governing Airbrake, Air Signals, Heating and Lighting Passenger Cars, Electric and Acetylene Headlights."

The booklet stated that "The rules herein set forth govern the railroads operated by these companies and supersede all previous rules and instructions inconsistent therewith. Special instructions may be issued by proper authority." thus indicating existence of previous rules.

Subsequent revisions and reissuance of these booklets were made in later years, January 1, 1922, May 1, 1926, January 1, 1939, September 1, 1944, December 1, 1951, the current issue; the last issue bearing title "Airbrake Rules and Regulations Governing Train Handling, Operation and Tests of Air and Dynamic Brakes and Air Signal Apparatus."

The latest book as well as previous issues contains the following—"The rules herein set forth govern the railroads operated by this company, and supersede all previous rules and instructions inconsistent therewith. Special instructions may be issued by proper authority."

These rules are still in effect.

These several revisions of the air brake rules and regulations over a period of 44 years, since July 1, 1909, and in existance prior to the time, as indicated by superseding instructions, show that the revisions of air brake rules are and have been currently and consistently made and kept in force consistent with improvements in design in brakes and equipment, and to meet and take advantage of improvements in operations and physical conditions of the property and equipment.

Southern Pacific rules include the requirements set forth as standard by the Association of American Railroads.

The airbrake rules and regulations currently in effect on Southern Pacific require thorough maintenance and inspection of airbrake equipment. They are a part of the operating rules, the first sentence of which reads: "Safety is of the

first importance in the discharge of duty. Obedience to the rules is essential to safety and is required."

These rules govern all types of trains and brake equipment that operate over the rails of the Southern Pacific.

Airbrake rules covering specific locations are contained in current timetable special instructions of each division and subdivision.

AIRBRAKE RULES ADOPTED BY THE ASSOCIATION OF AMERICAN RAILROADS

The current booklet issued by the Association of American Railroads, operations and maintenance department, mechanical division, entitled: "Maintenance of Airbrake and Air Signal Equipment on Locomotives and Cars," was issued January 1, 1942, and states that these rules were adopted as standard in 1925; revised 1933, 1934, 1941.

The issue of this booklet dated January 1926, when the present rules were adopted as standard in 1925, contains a clause stating—"Superseding previous rules shown in booklet issued February 1924."

The 1925 as well as the 1942 issues contains the following in the preface: "These rules were formulated jointly by the Bureau of Safety of the Interstate Commerce Commission and the safety appliance committee, of the mechanical division of the Association of American Railroads. They represent minimum requirements, and shall govern the maintenance of airbrake and air-signal equipment on locomotives and cars, provided that nothing herein contained shall be construed as prohibiting carriers from enforcing additional rules and instructions not inconsistent with these rules."

OTHER ASSOCIATION RULES

Railroad equipment interchanged among the railroads of the United States, Canada, and Mexico must meet physical conditions and specifications prescribed by the Association of American Railroads and detailed in the current issue of what is generally termed the "interchange rules."

These are formulated by the various committees of the mechanical division, operations and maintenance departments. Association of American Railroads, and approved by the member roads.

These rules cover many phases of design and construction including those applying to power brakes and appurtenances. These requirements for interchange apply principally to freight and passenger cars and have a long history of development beginning with the necessity of interchanging cars among railroads in the early history of railroad expansion.

The first code of rules to cover the interchange of freight cars was adopted some 80 years ago and consisted of 2 printed pages and 9 rules. These were adopted by the Master Car Builders Association which later became, in the course of time, the mechanical division of the Association of American Railroads.

Many revisions have been made in these rules during the course of 80 years, the current issue being as of January 1, 1953. In the 1926 Proceedings of the Mechanical Division, Appendix B, there is a historical record of standard and recommended practices showing changes in rules from 1893 to that time, giving some valuable history and information concerning progress in railway equipment design and rule changes. Rules have been greatly expanded and improved to meet the intensified traffic conditions of today's railroading and together with the manual of Standard and Recommended Practices of the Mechanical Division, and together with other pamphlets and books issued by the association which are as follows:

Lubrication Manual
Locomotive Tire Manual
Wheel and Axle Manual
Specifications for Tank Cars
Loading Rules for Open Top Cars (issued in 6 separate pamphlets and with 2 special supplemental pamphlets covering military requirements)

demonstrate the ability of the railroads to design and develop their own standards and rules to insure safe and prompt movement of traffic from any station to another throughout the United States and our neighboring countries.

The past history of this development is ample proof that rules and standards can be, and will continue to be, formulated as required with due regard to safety and efficiency in the movement of traffic on our railroads.

Summary—Collisions (excluding switching) and derailments reportable to the ICC, years 1948 to 1952, inclusive

	Number	Damage	Employee casualties	
			Killed	Injured
Collisions (excluding switching)	157	$1,316,550	4	45
Derailments	1,028	3,609,508	1	39

DERAILMENTS REPORTED ATTRIBUTABLE TO FAILURE OF POWER BRAKES, HOSE, ETC. (ICC CLASS D (A))

Derailments	8
Damage	$23,077
Employee casualties:	
Killed	-------
Injured	-------

ICC Class D (a): 0.78 percent of total derailments.
ICC Class D (a): 0.63 percent of total damage.

Total transportation car-miles	9,411,852,929
Total derailments (due to power brake failures)	8
Frequency of derailments per 100 million car-miles	0.08

No collisions due to failure of power brakes.

Collisions (excluding switching) and derailments reportable to the ICC, year 1948

	Number	Damage	Employee casualties		Details
			Killed	Injured	
Collisions (excluding switching)	44	$117,862	2	7	No collisions resulted from failure of airbrakes.
Derailments	210	685,474	1	14	

DERAILMENTS REPORTED ATTRIBUTABLE TO FAILURE OF POWERBRAKES, HOSE, ETC. (ICC CLASS D (A))

Division	Location	Date	Damage	Employee casualties		Details
				Killed	Injured	
Coast	Metz	Aug. 1, 1948	$558			Brake beam fell and lodged in frog. Freight movement.[1]
Do	Bayshore	June 2, 1948	665			Piece of brake shoe dropped into flangeway of switch frog. Yard movement.[1]
Do	San Francisco	June 28, 1948	536			Brake rigging down struck tie rod on switch. Yard movement.[1]
Western	Stock yards	May 28, 1948	2,492			Brake rigging down caught in frog. Freight movement.[1]
Tucson	Bosque	Apr. 24, 1948	1,743			Air hose broke causing defective draft arms to fall and draw bar to fall to track. Freight movement.
Coast	Arlight	Apr. 30, 1948	3,005			Brake rigging fell and engaged frog of switch. Freight movement.[1]
Rio Grande	Naco	Feb. 4, 1948	702			Air hose burst causing undesired emergency action of brakes pulling car apart. Freight movement.

[1] Erroneously reported in ICC Class D (a). Should be ICC Class D (c)—Brake beams or rigging failure.

Total derailments due to powerbrake failures, 2.
Total damage due to powerbrake failures, $2,445.
ICC Class D (a): 0.95 percent of total derailments.
ICC Class D (a): 0.36 percent of total damages.
Total transportation car-miles, 1,834,515,474.
Frequency of derailments per 100 million car-miles, 0.11.

Collisions (excluding switching) and derailments reportable to the ICC, year 1949

	Number	Damage	Employee casualties		Details
			Killed	Injured	
Collisions (excluding switching)	19	$102,258	2	1	No collisions resulted from failure of airbrakes.
Derailments	175	641,538	.....	2	

DERAILMENTS REPORTED ATTRIBUTABLE TO FAILURE OF POWER BRAKES, HOSE, ETC. (ICC CLASS D (a))

Division	Location	Date	Damage	Employee casualties		Details
				Killed	Injured	
Tucson	Welton	Nov. 2, 1949	$820	.....	.....	Brake hanger key bolt broke and brake beam dropped. Freight movement.[1]
Salt Lake	Avenel	Dec. 12, 1949	534	.....	.....	Udesired emergency action of brakes. Freight movement.[2]
Do	Golconda	July 30, 1949	12,699	.....	.....	Undesired quick action of brakes caused drawbar to pull out. Freight movement.[2]
Portland	Oakridge	June 5, 1949	2,697	.....	.....	Air hose parted causing undesired emergency action. Freight movement.[2]

[1] Erroneously reported in ICC Class D (a). Should be ICC Class D (c)—brake beams or rigging failures.
[2] Erroneously reported in ICC Class D (i). Not otherwise classifiable. Should be ICC Class D (a).

Total derailments due to power brake failures, 3.
Total damage due to power brake failures, $15,930.
ICC Class D (a): 1.71 percent of total derailments.
ICC Class D (a): 2.48 percent of total damages.
Total transportation car-miles, 1,749,834,667.
Frequency of detailments per 100 million car-miles, 0.17.

Collisions (excluding switching) and derailments reportable to the ICC, year 1950

	Number	Damage	Employee casualties		Details
			Killed	Injured	
Collisions (excluding switching)	41	$304,310	.....	17	No collisions resulted from failure of airbrakes.
Derailments	216	801,492	.....	6	

DERAILMENTS REPORTED ATTRIBUTABLE TO FAILURE OF POWER BRAKES, HOSE, ETC. (ICC CLASS D (A))

Division	Location	Date	Damage	Employee casualties		Details
				Killed	Injured	
Salt Lake	Battle Mountain.	Apr. 14, 1950	$832			Train went into emergency when air hose separated. Freight movement.
Tucson	Gila	Mar. 5, 1950	430			Truss rod brake and brake beam dropped down. Freight movement.[1]
Coast	Paso Robles	Mar. 28, 1950	481			Old weld in top rod broke making handbrake ineffective and car rolled out. Freight movement.[1]

[1] Erroneously reported in ICC class D (a). Should be ICC D (c)—Brake beams or rigging failures.

Total derailments due to power brake failures, 1.
Total damage due to power brake failure, $832.
ICC Class D (a): 0.46 percent of total derailments.
ICC Class D (a): 0.10 percent of total damages.
Total transportation car-miles, 1,896,215,584.
Frequency of derailments per 100 million car-miles, 0.05.

Collisions (excluding switching) and derailments reportable to the ICC, year 1951

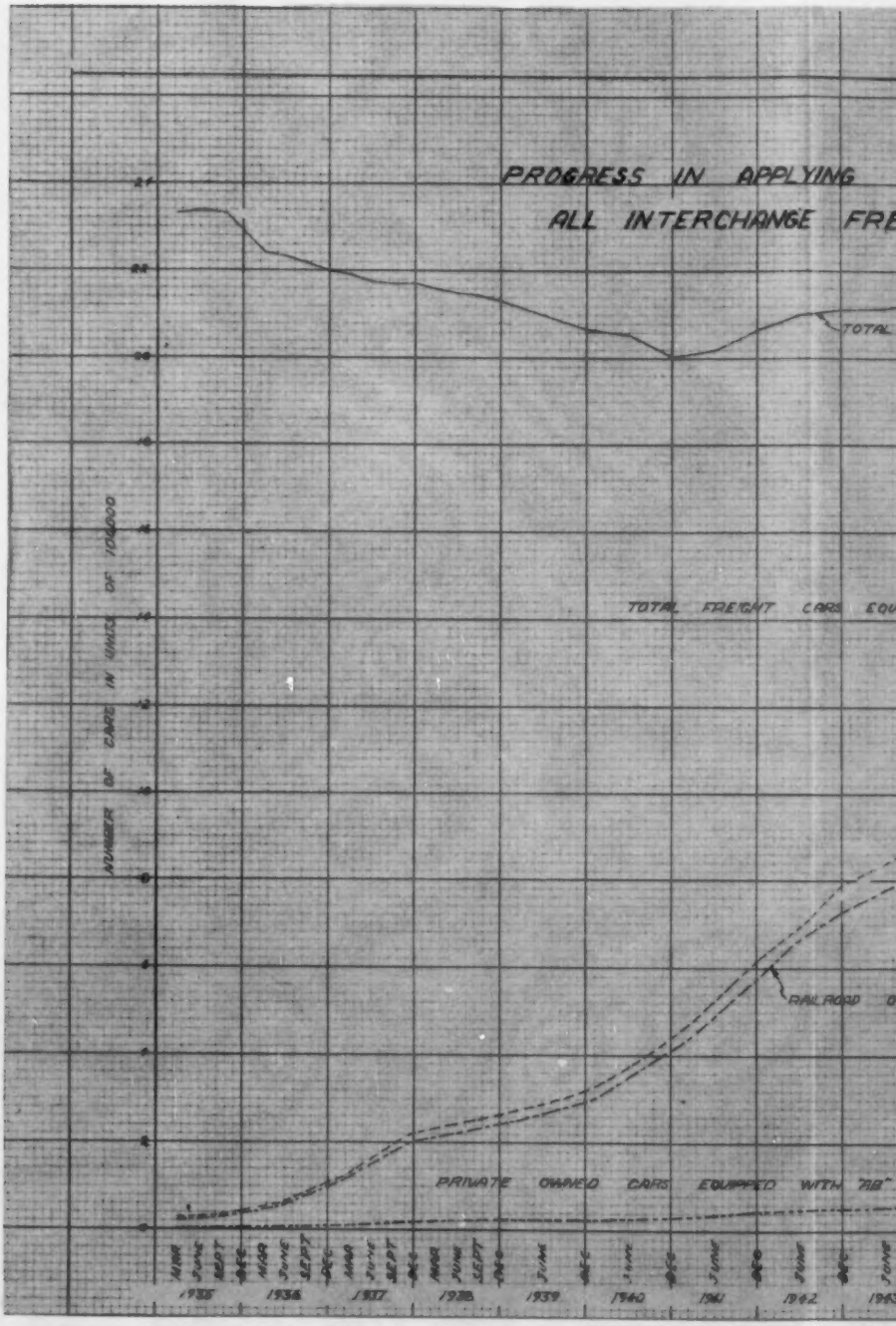
	Number	Damage	Employee casualties		Details
			Killed	Injured	
Collisions (excluding switching)	32	$240,022		11	No collisions resulted from failure of airbrakes.
Derailments	215	920,910		4	

DERAILMENTS REPORTED ATTRIBUTABLE TO FAILURE OF POWER BRAKES, HOSE, ETC. (ICC CLASS D (A))

Division	Location	Date	Damage	Employee casualties		Details
				Killed	Injured	
Los Angeles	Burbank	Mar. 10, 1951	$923			Defective handbrake allowed car to run through derail. Yard movement.[1]
Sacramento	Lawton	Jan. 3, 1951	3,193			Brakes applied in emergency when brake pipe broke on car. Freight movement.
Portland	Mayo	July 30, 1951	677			Air hose burst below top coupling due to fabric failure. Freight movement.[2]

[1] Erroneously reported in ICC Class D (a). Should be ICC Class D(c)—Brake beams or rigging failures.
[2] Erroneously reported in ICC Class D (c). Should be ICC Class D (a).

Total derailments due to power brake failures, 2.
Total damage due to power brake failures, $3,870.
ICC Class D (a): 0.93 percent of total derailments.
ICC Class D (a): 0.42 percent of total damages.
Total transportation car-miles, 1,928,724,795.
Frequency of derailments per 100 million car-miles, 0.10.


PROGRESS IN APPLYING
ALL INTERCHANGE FRE
TOTAL
TOTAL FREIGHT CARS EQU
NUMBER OF CARS IN UNITS OF 100,000
RAILROAD
PRIVATE OWNED CARS EQUIPPED WITH "AB"
MAR
JUNE
SEPT
DEC
1935
1936
1937
1938
1939
1940
1941
1942

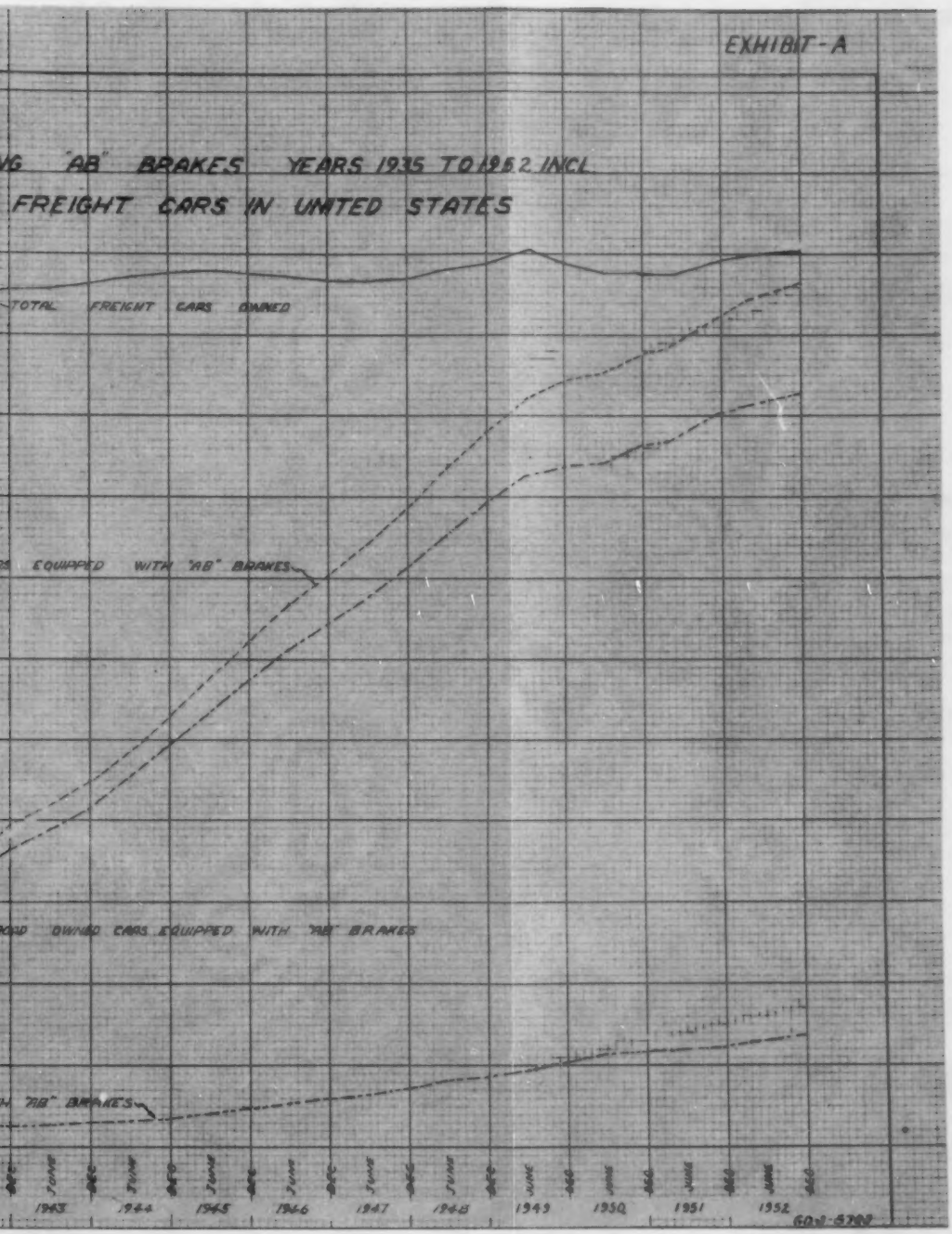
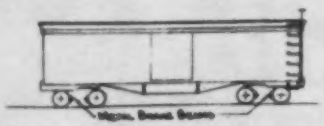
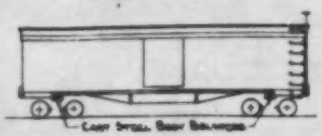
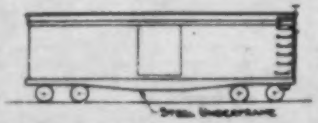
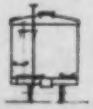
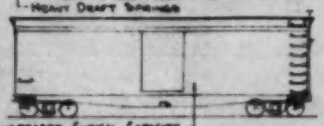


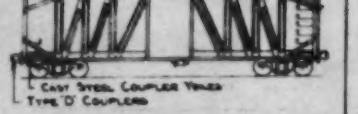
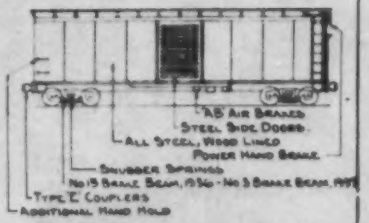
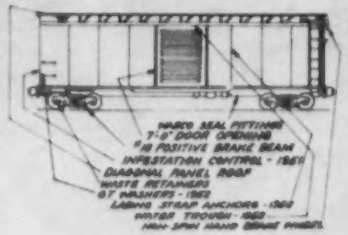
EXHIBIT - A
"AB" BRAKES YEARS 1935 TO 1952 INCL.
FREIGHT CARS IN UNITED STATES
TOTAL FREIGHT CARS OWNED
EQUIPPED WITH "AB" BRAKES
OWNED CARS EQUIPPED WITH "AB" BRAKES
"AB" BRAKES
DEC
JUNE
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
60W-6202

SOUTHERN PACIFIC COMPANY
PACIFIC LINES

CHRONOLOGY OF FREIGHT BOX CARS YEAR 1900 TO 1952
SHOWING DESIGN AND CAPACITY CHARACTERISTICS

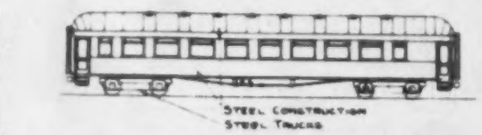
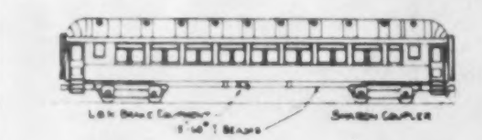
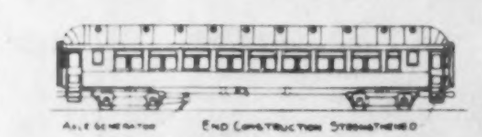
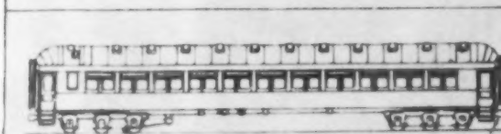
EXHIBIT "B"

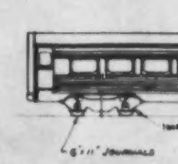
YEAR	SIDE ELEVATION A	END ELEVATION B	NEW FEATURES C	CARRYING CAPACITY & WEIGHT-LBS D	CUBICAL CAPACITY - CU FT E	CROSS SECTIONAL AREA - CENTER SILL - SQ INCHES F
1900			METAL BRAKE BEAMS	60 000 / 30 000	1946	
1901			CAST STEEL BODY BOLSTERS	60 000 / 30 000	1926	
1903			STEEL UNDERFRAME	80 000 / 34 000	2446	14
1904			10" AIR BRAKE CYLINDER	124 000 / 45 000	2750	16
1909			725 LB CAST IRON WHEELS HEAVY DRAFT SPRINGS CAST STEEL TRUCK SIDE FRAMES	124 000 / 45 000	2750	16
1911		(1)	INCREASED CUBICAL CAPACITY	125 000 / 44 000	3570	18
1915		(1) (2)	DOUBLE SHEATHED - STEEL SUPERSTRUCTURE FRAMING N-E TRIPLE VALVE	127 000 / 42 000	3558	23
1916		(1)	FRICTION DRAFT GEARS	127 000 / 42 000	3558	26
1919		(1) (2)	TYPE D COUPLERS CAST STEEL COUPLER YOKES	129 000 / 46 000	3400	26

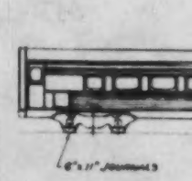
1919		(1) (2)	TYPE 'D' COUPLERS CAST STEEL COUPLER YOKES CORRUGATED STEEL ENDS	125 000	46 000	5100	26
1924		(1) (2)	750 LB CAST IRON WHEELS STEEL ROOF	126 000	45 000	3458	24
1925		(1) (2)	HEAVY GRADUATING SPRINGS AUXILIARY HAND BRAKE LEVER	125 000	44 000	5156	29
1927		(1) (2) (3)	750 LB CAST IRON SINGLE PLATE WHEELS BOTTOM ROD SUPPORTS 'U' SECTION TRUCK SIDE FRAMES	125 000	44 000	5156	29
1936 1937		(1) (2) (3) (4) (5) (6) (7) (8)	ALL STEEL, WOOD LINED STEEL SIDE DOORS ADDITIONAL HAND HOLDS POWER HAND BRAKE 'AB' AIR BRAKES TYPE 'E' COUPLERS SHUBBER SPRINGS No 15 BRAKE BEAM, 1936 No 3 BRAKE BEAM, 1937 BRAKE BEAM SAFETY GUARDS BOTTOM ROD SUPPORTS	124 000	45 000	3712	21.5
1940 1942		(1) (2) (3) (4) (5) (6) (7) (8)	SWIVEL SHANK COUPLERS COUPLER CENTERING DEVICE METAL RUNNING BOARDS METAL BRAKE STEP 'W' SECTION CORNER POSTS STEEL FLOOR PLATE WINE BRAKE BALANCER BRAKE HANGER WEARING PLATES BRAKE PIPE ANCHORS	124 000	45 000	3712	21.5
1946 1947 1948 1949		(1) (2) (3) (4) (5)	LIGHTWEIGHT DESIGN HIGH SPEED TRUCKS CORRUGATED STEEL ENDS, STRENGTHENED NEW TYPE SIDE PLATES WITH SLOPING SIDE & FACILITATE DRAINAGE STEEL WHEELS	128000	41000	3715	21.3
1950 1951 1952		(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)	WASTE RETAINERS GT WASHERS - APPLICATION UNDERWAY LADING STRAP ANCHORS WATER TROUGH NEW SPRING HAND BRAKE WHEEL DIAGONAL PANEL ROOF 7'-0" DOOR OPENING HARD SEAL FITTINGS - AIR BRAKE PIPING "AB" POSITIVE BRAKE BEAM EQUIPPED FOR INFESTATION CONTROL	124000	45000	3782	21.3

60-S 6105

SOUTHERN PACIFI
PACIFIC LINE
CHRONOLOGY OF PASSENGER COACH AN
SHOWING DESIGN AND

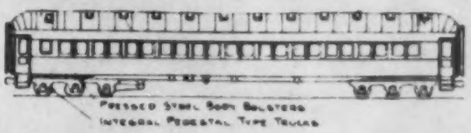
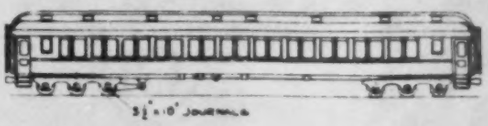
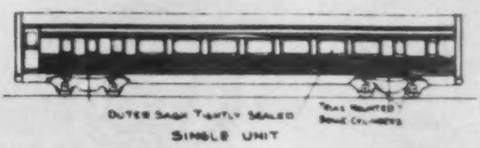
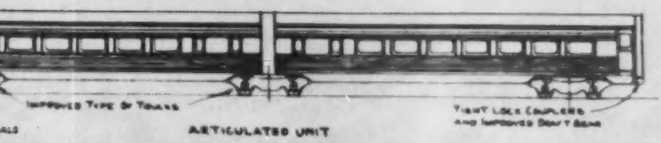
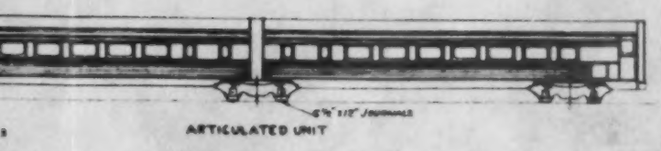
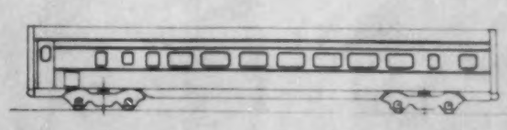
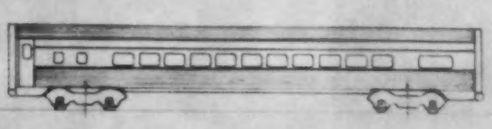
Side Elevation	Year	New Features	Length Over Platforms Coupled	Seating Capacity	Average Weight Lbs
Cast Steel Body Bolsters; 5"x9" Journals; 36" Solid Steel Wheels; Vestibule	1900 1901 1902 1903 1905	Length Increased Seating Capacity Increased Vestibules Air Signal Steam Heat Braking Ratio Increased To 85% Gas Lights 5"x9" Journals & 36" Solid Steel Wheels Trussed Steel Brake Beams Cast Steel Body Bolsters Braking Ratio Increased To 90%	67'-8½"	70	89100
 Steel Construction; Steel Trucks	1906	First Steel Car Built In America And Constructed In SP Cos Shops At Sacramento Calif All Steel Construction Except Inside Finish Which Is Wood Steel Trucks	67'-8½"	70	107000
Friction Draft Gear; All Steel Construction Including Inside Finish	1909	All Steel Construction-Including Inside Finish Friction Draft Gear Vapor Steam Heat 2" Steam Train Line	67'-8½"	72	89000
 L&N Brake Equipment; 15"40# I Beams; Sharon Coupler	1913	Size Of Center Sills Increased From 10"-25# I Beams To 15"-40# I Beams Sharon Couplers Applied In Place Of Janney Couplers "L" And N Brake Equipment - Type "L" Triple Valve And Type N Brake Cylinder Size Of Brake Cylinder Increased From 14"x18" To 16"x18" Combi Gas And Electric Lighting	67'-8½"	72	106000
 Axle Generator; End Construction Strengthened	1914	End Construction Strengthened Straight Electric Lighting Axle Generator	68'-0½"	72	107000
U-12 Universal Valve	1921	Improved Brake Equipment - U-12 Universal Valve Flush Hoppers Electric Ceiling Fans	68'-6⅛"	72	107800
 Six Wheel Trucks With Clasp Brakes; A.A.R. "D" Couplers & Gunnuple Sheathed	1939	Length Increased Seating Capacity Increased Six Wheel Trucks With Clasp Brakes A.A.R. "D" Couplers & Gunnuple Sheathed	80'-5½"	90	138600





CIFIC COMPANY
LINES
AND CHAIR CAR YEAR 1900 TO 1952
ND IMPROVEMENTS

EXHIBIT "C"

Side Elevation	Year	New Features	Length Over Platforms Couplers	Seating Capacity	Average Weight Lbs
 Pressed Steel Body Bolsters Integral Pedestal Type Trucks	1927	Pressed Steel Body Bolsters Integral Pedestal Type Trucks Long Center Pins Thermostatic Heat Control Double Deck Spring Seats	80'-5½"	90	140300
 5½"x10" Journals	1928	Men's and Women's Rest Rooms Separate Room Toilet Porcelain Wash Basins 5½x10" Journals Low End Train Line Valves	81'-6½"	88	130300
	1929	Men's and Women's Lounge Double Pan Hoppers	81'-9½"	Body of Car 58 Women's Lounge 4 Men's Smoking Room 8 Total 69	153500
 Outer Sash Tightly Sealed "Bag Mounted" Brake Cylinders Single Unit	1937	Streamlined Construction Rolled-Iron Bands and Stainless Steels Air Conditioned Outer Sash Tightly Sealed Tight Lock Couplers Improved Draft Gear Pressure Water System Indirect Lighting Seat Lights Individually Controlled Radio Reclining Seats with Spring Rubber Seats Aluminum Floor Plates, Cork Flooring Inlaid Linoleum Floor Covering Insulated Against Noise Compartments for Hand Luggage Electro Pneumatic High Speed Brake Equipment Improved Type of Trucks Provided Eagle Horns Spring Plo Lubricators - Journals Truck Mounted Brake Cylinders Steam Train Line Connection at 8 Flexible Metallic Conduit Safety Glass (Inside Sash) 6"x11" Journals Articulated Unit	79'-2"	Body of Car 48 Women's Lounge 8 Men's Smoking Room 6 Total 56	106500
 Improved Type of Trucks Tight Lock Couplers and Improved Draft Gear Articulated Unit			132'-2"	Body of Car 100 Women's Lounge 10 Men's Smoking Room 8 Total 118	170800
Electric Luggage Elevators Single Unit 6"x11" Journals	1939 1941	Fluorescent Lighting Electric Luggage Elevators Center Sills and End Framing Members Made of Special Center Sill Steel and Designed to Meet AAR Locomotive Recommendations of Feb 24 1939 Inlaid Rubber Floor Covering Public Address System Bolster Anchors Zone Heating 2¾" Steam Trainline and 2¾" Flexible Metallic Connection 6"x11" Journals	84'-0"	Body of Car 44 Women's Lounge 8 Men's Smoking Room 6 Total 58	117800
 6"x11" Journals Articulated Unit			136'-0"	Body of Car 92 Women's Lounge 8 Men's Smoking Room 6 Total 98	194800
	1949	Pressurized Air Conditioning Center Sills & End Framing Members Designed To Exceed AAR Standards Sealed Sash Type H Tightlock Couplers Improved Type of Truck Roller Bearings Shock Absorbers Anti-Wheel Slip Control Electric Hot Box Alarm	85'-0"	Body of Car 48 Women's Lounge 4 Men's Smoking Room 6 Total 54	185500
			85'-0"	Body of Car 44 Women's Lounge 6 Men's Smoking Room 6 Total 50	130100
	1950	Lea Rest Seats Stainless Steel Construction Heat Absorbing Glass Axle Driven Motor Generator Air Horns Booster Inverter Disc Brake Trucks	85'-0"	Body of Car 44 Women's Lounge 8 Men's Smoking Room 6 Total 57	120000

SOUTHERN PACIFIC
PACIFIC LIN
CHRONOLOGY OF FREIGHT LOCO
YEARS 1899
SHOWING IMPROVED DESIGN AND IN

TYPE WHEEL ARRANGEMENT (WHYTE SYSTEM)

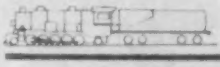
MOGUL 2-6-0

CONSOLIDATION 2-8-0

MIKADO 2-8-2

2-10-2 SMALL 2-10-2

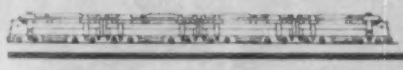
2-10-2 LARGE* 2-10-2



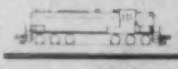
SOUTHERN PACIFIC* 4-10-2

ARTICULATED CONSOLIDATION 4-8-8-2

DIESEL FREIGHT 4(B-B)

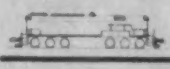


DIESEL FREIGHT

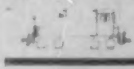


DF-100	1500 HP	48,350 LBS
DF-101	1500 HP	82,250 LBS
DF-103	1500 HP	81,950 LBS
DF-104	1500 HP	81,950 LBS
DF-112	1800 HP	82,350 LBS

BOOSTER



DIESEL FREIGHT



BOOSTER

DIESEL FREIGHT

DF-200	660 HP	54,750 LBS
DF-201	660 HP	54,480 LBS

EXHIBIT-D

PACIFIC COMPANY
IFIC LINES
LOCOMOTIVES PACIFIC LINES
899 TO 1952
AND INCREASED TRACTIVE EFFORT

TYPE	CLASS	YEAR PUT IN SERVICE	NUMBER PURCHASED	AVERAGE PRICE EACH	TRACTIVE EFFORT LBS	WT ON DRIVERS LBS	BOILER PRESSURE LBS	TENDER CAPACITY OIL GALS	TENDER CAPACITY WATER GALS
MOGUL	M-6	1899 - 1901	103	$ 16,000	28,710	128,000	190	2,890	4,580
CONSOLIDATION	C-8,10	1905 - 1911	172	17,900	42,300	187,000	200	2,940	7,080
MIKADO	MR-5,6	1913 - 1913	33	24,500	51,060	210,000	200	2,940	8,000
2-10-2 SMALL	F-1	1917 - 1919	52	68,000	63,300	273,000	200	3,120	10,030
2-10-2 LARGE *	F-4,5	1922 - 1930	101	84,000	78,190	308,000	200	4,000	12,000
SOUTHERN PACIFIC *	SP-12,3	1925 - 1927	40	90,000	84,200	317,000	225	4,012	12,198
ARTICULATED CONSOLIDATION	AC-4	1928	10	138,960	98,900	378,200	235	4889	16,152
ARTICULATED CONSOLIDATION	AC-8	1939	28	183,000	124,300	534,700	250	6400	21,900
ARTICULATED CONSOLIDATION	AC-9	1939	12	202,000	124,300	531,700	250	[illegible]	22,120
ARTICULATED CONSOLIDATION	AC-10	1942	40	215,400	124,300	531,700	250	6400	21,900
ARTICULATED CONSOLIDATION	AC-11,12	1942 - 1944	90	259,000	124,300	534,700	250	6400	21,900
DIESEL FREIGHT	DF-1	1947	20	612,300	234,000	983,900	-	-	-
DIESEL FREIGHT	DF-2	1948 - 1949	20	647,400	234,100	936,100	-	-	-
DIESEL FREIGHT	DF-3,4	1949	30	700,800	242,350	969,400	-	-	-
DIESEL FREIGHT	DF-5	1949 - 1950	29	632,500	233,850	935,400	-	-	-
DIESEL FREIGHT	DF-100	1948	3	178,200	45,350	181,400	-	-	-
DIESEL FREIGHT	DF-101	1949	10	178,200	82,290	329,000	-	-	-
DIESEL FREIGHT	DF-105,106 & 108	1949 - 1950	19	184,900	81,575	327,800	-	-	-
DIESEL FREIGHT	DF-110	1951	8 [illegible]	176,510	80,790	323,750	-	-	-
DIESEL FREIGHT	DF-112	1952	28	192,000	82,530	330,130	-	-	-
DIESEL FREIGHT	DF-200	1949	10	78,150	34,750	138,000	-	-	-
DIESEL FREIGHT	DF-201	1949 - 1950	4	72,600	34,480	137,950	-	-	-
DIESEL FREIGHT	DF-300 & 301	1950 - 1951	4	191,700	103,430	413,730	-	-	-

* BOOSTER EQUIPPED

LBS

242,350 LBS

DF-108 1600 H.P 81,575 LBS
DF-110 1600 H.P 80,790 LBS

TYPICAL CONNECTED 183,040 LBS

ECTED
0 LBS

SOUTHERN PAC
PACIFIC
CHRONOLOGY OF PASSENGER L
YEARS 18
SHOWING IMPROVED DESIGN AN

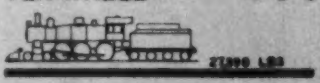
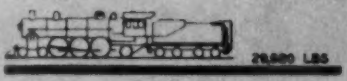
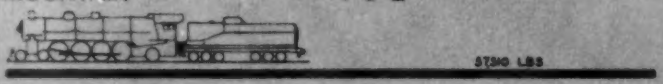
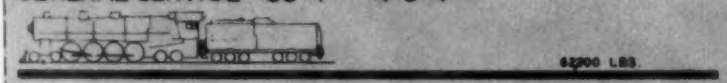
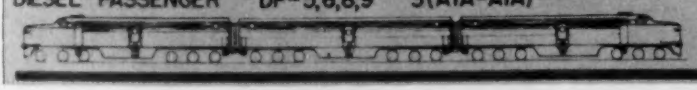
TYPE	WHEEL ARRANGEMENT (WHYTE SYSTEM)	
TEN WHEEL	4-6-0	
TEN WHEEL	4-6-0	
PACIFIC	4-6-2	
PACIFIC	4-6-2	
MOUNTAIN *	4-8-2	
GENERAL SERVICE * GS-1	4-8-4	
GENERAL SERVICE * GS-2,3,4,5,6	4-8-4	
DIESEL PASSENGER DP-3,4,7	3(A1A-A1A)	
DIESEL PASSENGER DP-5,6,8,9	3(A1A-A1A)	

EXHIBIT-E

N PACIFIC COMPANY
PACIFIC LINES
ER LOCOMOTIVES PACIFIC LINES
S 1895 TO 1952
GN AND INCREASED TRACTIVE EFFORT

TYPE	CLASS	YEAR PUT IN SERVICE	NUMBER PURCHASED	WEIGHT PER ENGINE EACH	TRACTIVE EFFORT LBS	WT ON DRIVERS LBS	BOILER PRESSURE LBS	TENDER CAPACITY OIL GAL'S	TENDER CAPACITY WATER GAL'S
TEN WHEEL	T-1	1895-1897	39	94,500	25,260	112,500	180	3,000	4000
TEN WHEEL	T-25	1901	5	140,000	27,590	134,000	200	2,940	7,000
PACIFIC	P-5	1912	15	228,500	28,820	141,000	200	2,940	7,000
PACIFIC	P-8	1921	15	72,500	43,880	180,000	200	4,000	12,000
MOUNTAIN *	M-1	1923-1924	28	88,000	37,540	244,000	210	4,000	12,000
GENERAL SERVICE *	GS-1	1930	10	115,000	62,200	262,000	250	4,912	16,152
GENERAL SERVICE *	GS-2	1937	6	138,000	62,200	286,000	250	6,275	21,800
GENERAL SERVICE *	GS-3	1937	14	132,800	62,800	267,000	280	6,275	21,800
GENERAL SERVICE *	GS-4	1941	20	173,000	64,800	278,000	300	6275	23,300
GENERAL SERVICE *	GS-4	1942	8	174,700	64,800	278,000	300	6,275	23,300
GENERAL SERVICE *	GS-5	1942	2	222,000	64,800	278,000	300	6,275	23,300
GENERAL SERVICE *	GS-6	1943	10	207,000	64,800	270,000	280	6,275	23,300
DIESEL PASSENGER	DP-3	1946	1	980,000	150,720	642,900			
DIESEL PASSENGER	DP-4	1947	5	594,000	151,200	644,800			
DIESEL PASSENGER	DP-5	1948	3	648,500	152,000	608,000			
DIESEL PASSENGER	DP-6	1949	3	498,000	154,395	625,400			
DIESEL PASSENGER	DP-7	1950	1 UNIT	232,000	55,360	221,000			
DIESEL PASSENGER	DP-8	1950	2	648,600	157,585	630,340			
DIESEL PASSENGER	DP-9	1952	1 SET OF 2 UNITS	792,000	156,330	625,320			

* BOOSTER EQUIPPED

DP-3 150,720 LBS - 5600 HP
DP-4 151,200 LBS - 6000 HP
DP-7 55,360 LBS - 2250 HP

DP-5 152,000 LBS - 6000 HP
DP-6 154,395 LBS - 6000 HP
DP-8 157,585 LBS - 6750 HP
DP-9 156,330 LBS - 6750 HP

SOUTHERN P
COMPARIS
ALL STEEL, ST
OTH
YEA

NUMBER OF CARS			
"A"	"B"	"C"	
2891		26978	
3088		26264	
4330		26743	
5289		25919	
7300		26621	
9045		26764	
10203		26578	
13083		27828	
13871		29853	
16842		30161	
18976		31492	
22422		34049	
21909		33126	
21621		32475	
25476	262	30704	
25659	2858	34337	
26520	2966	35988	
26632	2991	36326	
26822	3216	36580	
26814	3217	36547	
31771	3732	35464	
39799	4542	40260	
44670	5018	49118	
46559	5216	52185	
48361	5384	53865	
49166	5473	55338	

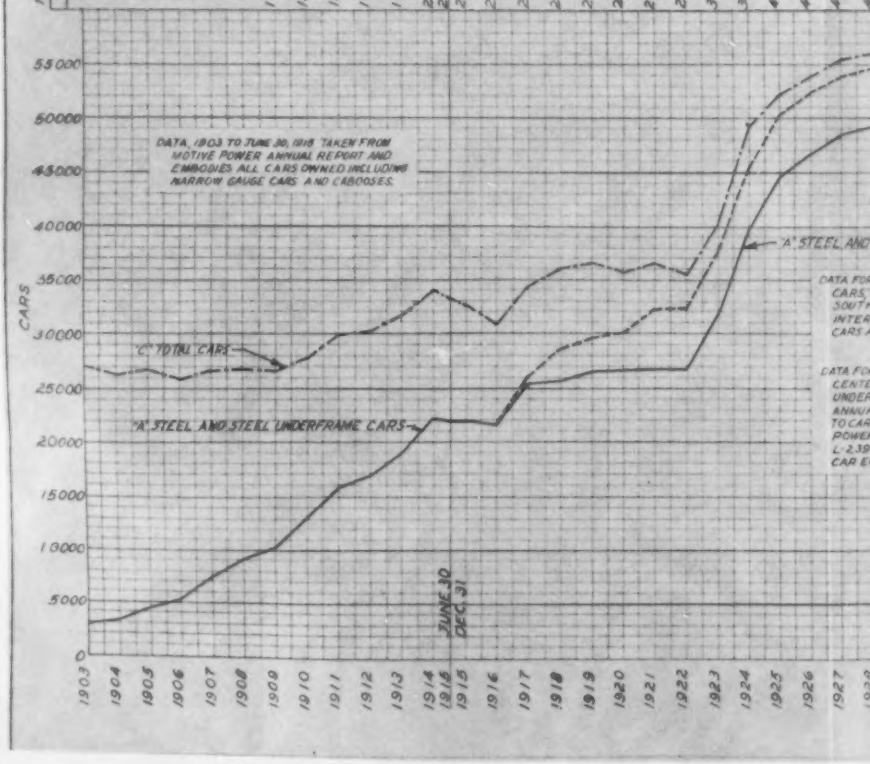
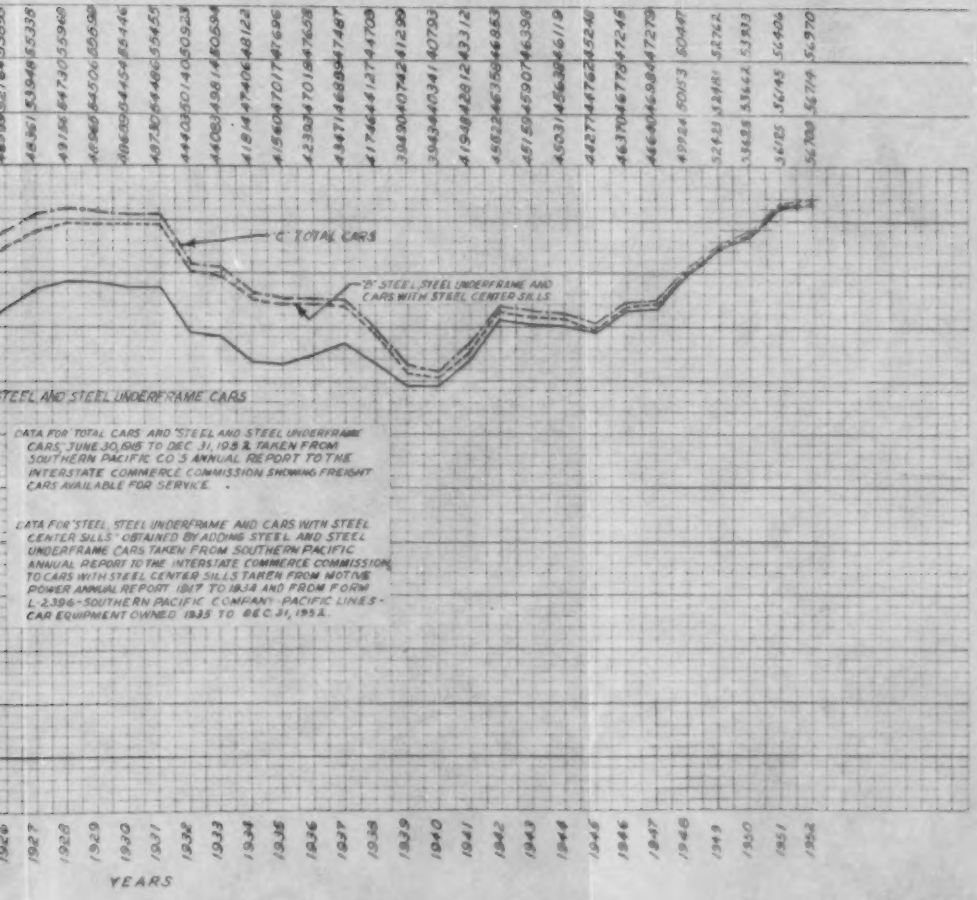


EXHIBIT-F

TRIM LINE

HERN PACIFIC CO. PACIFIC LINES
MPARISON OF FREIGHT CARS
EEL, STEEL UNDERFRAME AND OF
OTHER CONSTRUCTION
YEARS 1903 TO DEC. 31, 1952.



DATA FOR TOTAL CARS AND "STEEL AND STEEL UNDERFRAME CARS" JUNE 30, 1915 TO DEC. 31, 1952 TAKEN FROM SOUTHERN PACIFIC CO.'S ANNUAL REPORT TO THE INTERSTATE COMMERCE COMMISSION SHOWING FREIGHT CARS AVAILABLE FOR SERVICE.

DATA FOR "STEEL, STEEL UNDERFRAME AND CARS WITH STEEL CENTER SILLS" OBTAINED BY ADDING STEEL AND STEEL UNDERFRAME CARS TAKEN FROM SOUTHERN PACIFIC ANNUAL REPORT TO THE INTERSTATE COMMERCE COMMISSION TO CARS WITH STEEL CENTER SILLS TAKEN FROM MOTIVE POWER ANNUAL REPORT (M-P) TO 1934 AND FROM FORM L-2396 - SOUTHERN PACIFIC COMPANY - PACIFIC LINES - CAR EQUIPMENT OWNED 1935 TO DEC. 31, 1952.

Collisions (excluding switching) and derailments reportable to the ICC, year 1952

	Number	Damage	Employee casualties		Details
			Killed	Injured	
Collisions (excluding switching)	21	$552,098	.....	9	No collisions resulted from failure of airbrakes.
Derailments	212	560,094	.....	13	

Derailments reported attributable to failure of power brakes, hose, etc. (ICC Class D (a))—none.

INTERNATIONAL ASSOCIATION OF MACHINISTS,
Washington 1, D. C., April 16, 1953.

Hon. CHARLES W. TOBEY,
Chairman, Senate Interstate and Foreign Commerce Committee,
Washington, D. C.

DEAR SENATOR TOBEY: The International Association of Machinists, which represents the machinists on every major railroad in this country, has a sincere interest in legislation pertaining to the safety of rail transportation and to the functions of the Interstate Commerce Commission.

Time did not permit us to appear personally before the committee, of which you have the honor of being chairman, to express our views on the bills, namely S. 539 and S. 1401, on which hearings were held this week. We are therefore using this medium to express our endorsement and support for this major legislation which would authorize the Interstate Commerce Commission to make mandatory the installation of certain railway communications systems as set forth in S. 539 and to further authorize the ICC to require railroads to install power brakes and comply with prescribed specifications as provided for in S. 1401.

We are confident that the enactment of this legislation is in the best interests of not only the railroads and their employees but also the safety and welfare of the general public, both to the people who use railway transportation and as a protection to private property.

With best wishes, I am

Sincerely yours,

A. J. HAYES, *International President.*

STATEMENT OF WILLIAM H. OTT, JR., ON BEHALF OF THE NATIONAL INDUSTRIAL TRAFFIC LEAGUE

My name is William H. Ott, Jr. I am chairman of the legislative committee of the National Industrial Traffic League whose office is 711 14th Street NW, Washington, D. C.

The National Industrial Traffic League is a national organization of those directly and individually engaged in the shipment and receipt of commodities; its membership also includes chambers of commerce, boards of trade, and similar commercial organizations whose membership likewise have a substantial and continuing interest in traffic and transportation matters. The league's membership is drawn from all parts of the United States and represents practically every line of industrial and commercial activity. The members make use of all of the different types of transportation agencies and have a direct interest in the efficiency, economy, and safety of the operation of rail lines.

The substantive provisions of S. 539 are an exact counterpart of those contained in S. 2356, a bill introduced by Senator Johnson of Colorado in the second session of the 82d Congress. That bill was considered and acted upon by the league membership at its meeting in March 1952. A statement in opposition to the bill was presented to your committee by Mr. Schwietert on March 28, 1952 (Hearings before the Committee on Interstate and Foreign Commerce, U. S. Senate, 82d Cong., 2d sess., p. 364).

The position there taken is today the position of the league with respect to S. 539. I am attaching a copy of that statement and ask that it be considered in connection with the present bill.

WASHINGTON, D. C., *April 9, 1953.*

STATEMENT OF MR. A. H. SCHWIETERT ON BEHALF OF THE NATIONAL INDUSTRIAL TRAFFIC LEAGUE

This bill has two purposes. First, to give the Commission power to require carriers to use telegraph, telephone, radio, inductive, or other wayside or train communication systems in addition to its present power to require the installation of the block-signal system, interlocking, automatic train stop, train control and/or cab-signal devices to promote the safety of railroad operation. The second requirement is that the Commission be given power to establish, maintain, and observe rules and regulations for the operation of trains in connection with the above-named devices, appliances, methods, and systems maintained to promote safety of railroad operation.

First, I desire to make it clear that the league is not objecting to any program which is designed to improve safety of operation, or to provide adequate protection of railroad employees and travelers.

This bill, however, in our opinion, relates not only to matters of safety, but because of its broad language would extend the authority of the Commission over rules and regulations for the detailed operation of the railroad systems of the country.

The present act requires that the railroads file with the Commission rules, standards, and instructions for the installation, inspection, maintenance, and repair of the systems, devices, and appliances covered by section 25.

The bill, however, does not relate only to rules and regulations for the installation, inspection, and maintenance, but to the rules and regulations for the operation of trains in connection with the above-named devices, et cetera. This language appears to be similar to S. 238, 81st Congress, first session (1949) to which the league objected at that time.

The league is of the view that the present broad general powers of the Commission over the safe operation of railroads is sufficient without granting further authority to give the Commission jurisdiction over the minutest detailed rules and regulations covering the operation of all phases of rail transportation. The league is also of the opinion that the railroads should be allowed to manage their properties with the widest possible degree of latitude. The operations of trains may vary greatly in different sections of the country and from day to day. Operating men of the railroads are familiar with local conditions. They are familiar with the particular section of the lines over which they operate and should be given as much leeway as possible in order to operate as safely and efficiently as can be done, having in mind such local operation conditions. It appears to us that the requirement that the Interstate Commerce Commission review all of the operating rules and regulations of the carriers for the purpose of determining whether or not, in its opinion, they will or will not promote safety of railroad operation will add a tremendous burden on the Commission.

The league believes that the best interests of the shippers will be served by allowing the operating rules and regulations to be determined by management and, therefore, recommends that S. 2356 do not pass.

POWELL, WIRTZ & RAUHUT,
Austin 61, Tex., April 20, 1953.

In re S. 1401, ICC Control of Railroad Power Brakes; S539, ICC Control of Railroad Operating Rules.

Hon. LYNDON B. JOHNSON,
Senate Office Building, Washington, D. C.

DEAR LYNDON: I write you to express my vigorous opposition to the proposed laws above mentioned. These measures are pending before your Committee on Interstate and Foreign Commerce and you have a great responsibility in connection therewith.

A lawyer friend of mine who wrote you in opposition to S. 1401 expressed my views so clearly and completely that I take the privilege of quoting from his letter as follows:

"Unquestionably the power brake bill [No. 1401] was inspired by the spectacular but nonfatal accident in the Washington Union Station a few weeks ago. This is really a little puzzling to some of us. You will recall that not very long ago a couple of busses got together head-on near Waco with horribly tragic results. The public was shocked, sympathetic, but no one seemed seriously inspired to pass a law. When airliners crash and snuff out lives there is public shock and sym-

pathy, but no legislative inspiration results. Our industry has a spectacular freak accident, without any loss of life, and somebody wants to pass another law which will hamstring us further in our already overregulated operation of railroad trains."

It seems clear to me that this is another instance of where tragical facts suggest bad laws. The making of new laws should not be the answer to every bad fact situation. Many of us still believe that those people are best governed who are least governed and that there should be no excuse for new laws when any other adequate solution is available. Certaintly this matter can be solved by the railroads themselves without the need of the assistance of any law.

It also seems clear to me that S. 539 is much worse than S. 1401. The former bill would give a governmental agency minute control over all operations of the railroad trains. This should not be. Necessarily, railroad management has full responsibility for those operations, and neither the regulatory agency nor certain railroad brotherhoods who favor this bill seem disposed to assume that responsibility. Apparently, their one desire is to direct the managers in precise detail as to just how that responsibility shall be discharged in actual operation of the railroads. The sponsors of this bill are in error if they deny that it would have the effect charged. I say this because railroad operators have had a good deal of practical experience with regulatory measures couched in general and all-inclusive terms as this one is.

I have been much impressed with the testimony of Mr. Thomas L. Preston before your committee in connection with both of these bills recently. I hope you may see fit to follow his recommendations. I understand he is a level-headed man of temperate expression who thoroughly understands the railroad industry. May I also commend to your attention the testimony of Messrs. Gurley and Shoemaker in connection with these bills.

It is claimed that these bills are beneficial as "safety" measures. As I see it, this is an erroneous claim. To the contrary, the measures constitute further detailed regulation of the operations of what is already far and away the safest form of public transportation. Along this line, Mr. Mumford, safety manager of the New York Central, has prepared some interesting tables and they are before your committee.

As you doubtless know, I am one of the attorneys for certain of the railroads, including the Missouri Pacific. But, I believe you know me well enough to know that I would not recommend any action to you unless I personally sincerely believed in it. I would not ask you to do anything which I would not do myself if I were in your position. I sincerely hope you will oppose the passage of these bills. It is regrettable that the railroads have to oppose so many vicious proposed laws that they have but little time left to propose wise regulation and bring the transportation policy up to date.

With kindest regards always, I remain,

Very sincerely yours,

BEN H. POWELL.

INTERSTATE COMMERCE COMMISSION,
Washington, April 23, 1953.

Re S. 1401 and S. 539

Hon. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate, Washington, D. C.

DEAR MR. CHAIRMAN: In compliance with your request of February 15, I am enclosing for the record in connection with the above-numbered bills my statement in rebuttal to the testimony introduced by certain opponents thereof. If your committee desires amended bills they will be prepared and submitted as substitutes for those now before your committee.

Yours very truly,

W. J. PATTERSON, *Commissioner.*

STATEMENT OF WILLIAM J. PATTERSON, INTERSTATE COMMERCE COMMISSIONER WHO APPEARED BEFORE THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE OF THE SENATE IN SUPPORT OF BILLS S. 1401 AND S. 539 ON WEDNESDAY, APRIL 15, 1953

Pursuant to a request from the chairman of the above committee I am submitting herewith my statement in rebuttal to the testimony introduced by the several opponents of these bills.

I will first direct my statements to bill S. 539 which proposes to amend section 25 of the Interstate Commerce Act so as to make that section also applicable to telegraph, radio, inductive, and other wayside and/or train communication systems. From the outset I wish to make it clear to the committee and to allay the stated fears of the representatives of the railroads that the Interstate Commerce Commission has no intention of usurping the power of or interfering in the management or operation of the railroads. Notwithstanding the testimony submitted and statements repeatedly made, passage of the bill would not place in the hands of the Commission the power to prescribe rules for the operation of trains. This bill is not intended for that purpose. On the contrary its purpose is to enlarge the scope of the Commission's present jurisdiction so that in addition to its power to order the installation of the block signal system, interlocking, automatic train stop, train control, and/or cab signal devices and all other similar appliances, methods and systems intended to promote the safety of railroad operation and to prescribe rules and regulations for the filing of rules, standards and instructions for the installation, inspection, maintenance, and repair of such systems the Commission would have added to its jurisdiction, first, the right to order the installation of train communication systems (which may include telegraph, telephone, radio, inductive, or other wayside systems) whenever such communication systems are needed to promote the safety of railroad operations; and, secondly, the right to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair thereof in the same manner that it presently has under section 25 in respect of signals when a carrier fails to file such rules, standards, and instructions.

Although section 25 of the act as now in effect requires carriers to file rules, standards, and instructions for the installation, inspection, maintenance, and repair of the block signal systems, interlocking, automatic train stop, train control and/or cab signal devices, and/or other similar appliances, methods, and systems intended to promote safety of railroad operation, individual carriers have never filed such rules, standards, and instructions, with the result that the Commission has prepared such minimum rules, standards, and instructions under authority of the first proviso in subsection (e) of section 25 of the act, which rules are now and have been since September 1, 1939, obligatory on all carriers. A similar provision is contained in bill S. 539 with respect to train communication systems (including telegraph, telephone, radio, inductive, or other wayside systems).

Since the opponents of this bill are apprehensive of the present wording which they interpret as giving the Commission very broad powers over the operation of their trains, I would suggest that the bill be amended so that it will more clearly express the scope of the authority that it is intended to grant to the Commission.

Since the installation and use of radio or similar communication systems would require the obtaining of a radio wave band or frequency, station permit, or license under the Communications Act of 1934 as amended, bill S. 539 contains a provision (not now in sec. 25 of the act) to meet any such contingency.

These are the essential elements of the bill. I have tried to explain as plainly as I could the purposes of the bill and I again want to stress the fact that the rules of the carriers under which their trains are operated, and which under the present section 25 of the act are not required to be filed with the Commission, will continue to be promulgated and adopted by each individual carrier without interference from the Commission. It is not the intention or desire of the Commission to obtain radical or broad revisions of section 25 of the act. Under that section the Commission is now granted authority to prescribe the minimum requirements with respect to the installation, inspection, maintenance, and repair of signal systems, devices, etc., and under the Locomotive Inspection Act it has authority for the prescription of similar minimum requirements for the safe condition of locomotives and tenders, and parts and appurtenances thereof. Under bill S. 539 the Commission would have extended to it authority to prescribe the same minimum requirements with respect to communication systems that it now has with respect to signals under section 25 of the act and with respect to locomotives and tenders, etc., under the Locomotive Inspection Act.

With respect to bill S. 1401, I wish to quote the following from the existing rules for the maintenance and testing of air brake equipment:

"These rules were formulated jointly by the Bureau of Safety of the Interstate Commerce Commission and the Safety Appliance Committee, of the mechanical division of the Association of American Railroads. They represent minimum requirements, and shall govern the maintenance of airbrake and air signal equipment on locomotives and cars, provided that nothing herein con-

tained shall be construed as prohibiting carriers from enforcing additional rules and instructions not inconsistent with these rules."

The Commission has authority under the Locomotive Inspection Act to enforce such of those rules as pertain to locomotives and it is my belief that no one will question the success of the administration of that authority. Neither the Commission nor the Association of American Railroads has authority to enforce those rules with respect to railroad cars or trains.

The rules were formulated in 1925 and would, if properly enforced by the railroads, insure proper maintenance of power brake equipment. However, the failure of many railroads to comply with the rules has led to a general deterioration in the condition of power brake equipment on railroad cars. The continued downward trend in the condition of this equipment made it obvious several years ago that some means of obtaining enforcement of the rules was necessary to improve existing unsatisfactory conditions. During negotiations between representatives of our Bureau of Safety and of the Association of American Railroads during the past 3 years with respect to revision of the rules it has repeatedly been pointed out to the railroad representatives that, because of the failure of many railroad to comply with the present rules, a primary requisite for any set of revised rules must necessarily be some provision to insure enforcement.

I personally brought this matter to the attention of the mechanical division of the Association of American Railroads in an address at their annual meeting on June 27, 1951. In reference to this matter, I said:

"Considerable progress has been made toward formulating a satisfactory set of rules, but up to this time no provision has been made to insure compliance with such rules. Rules not uniformly complied with and which are not enforced are of but little value. The difficulties experienced during the last few winters with excessive brake pipe leakage, only a portion of which was a result of inferior material, the excessive number of inoperative power brakes found by inspectors of the Bureau of Safety while making terminal airbrake tests, and observations made at various trainyards and repair tracks are indications of failure on the part of many railroads to properly comply with the existing airbrake maintenance rules. One of the most destructive elements to safe operation of a railroad is the tolerance of rules violation. It is evident that there is a need for some action to make these rules mandatory and for some provision to insure proper compliance by all member railroads."

Up to this time no provision for enforcement has been offered by the representatives of the Association of American Railroads and it seems clear that the only practical solution is the enactment of legislation giving the Commission authority to enforce compliance with minimum requirements necessary to maintain power brake equipment in safe operating condition.

I have previously introduced evidence furnished by our inspectors showing the failure of many railroads to comply with existing rules. Further evidence of this can be found in the annual published proceedings of the mechanical division of the Association of American Railroads and in their circular letters of recent years wherein attention of all member lines was called to the troubles experienced because of defective power brake equipment resulting from failure of many railroads to comply with the rules. In the published proceedings of recent years railroad officers have stated that most railroads are not complying with the rules; that trains are being operated over mountain ranges without sufficient air pressure at the rear of train for safe operation, and that trains were being reduced to 50 percent of their normal number of cars because of excessive brake-pipe leakage. Excessive brake-pipe leakage can only be found by appropriate tests when the cars are on repair tracks and I am advised that only a few railroads are making such tests.

In regard to the memorandum submitted by Mr. Preston on April 14 relative to the corrective action taken by the mechanical division of the Association of American Railroads following the Union Station accident, I offer the following:

My letter of March 16, a portion of which was quoted, outlines the changes necessary in the proposed revision of the Association of American Railroads Manual of Standard and Recommended Practices. If the recommended specification changes are accepted and made a standard requirement, they, as well as other specifications, will be applicable only to such cars as are used in interchange service between two or more carriers. To adopt such a revision will, under the usual procedure, require several months as it will have to be submitted as a letter-ballot item to a vote of the membership of the association.

INTERSTATE COMMERCE COMMISSION,
May 4, 1953.

HON. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate, Washington, D. C.

MY DEAR CHAIRMAN TOBEY: This is in further reply to your letter of January 22, 1953, addressed to the Chairman of the Commission and requesting comments on S. 539, introduced by you, to authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems. In a previous letter, dated March 10, 1953, our Committee on Legislation and Rules submitted comments explaining the need for, suggesting changes in, and expressing our approval of this proposed legislation. After further consideration by the entire Commission, I am authorized to submit the following additional comments:

This bill would amend section 25 of the act by adding train communication systems to the devices, appliances, methods, and systems, which the Commission may require to be installed and as to which the carriers are required to file their rules, standards, and instructions for installation, inspection, maintenance, and repair.

Most of the objections raised by opponents of the bill have been in regard to the proposed authority over rules and regulations for the operation of trains in connection with these systems and devices. It has been suggested that the bill would give the Commission complete control over the operation of trains. This bill, as we understand it, is limited to rules and regulations with respect to the enumerated systems and devices.

In keeping with this letter we are attaching hereto a proposed redraft of S. 539.

Respectfully submitted.

J. HADEN ALLDREDGE, *Chairman.*

A BILL To authorize the Interstate Commerce Commission to make mandatory the installation of certain railroad communication systems

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) subsections (b), (c), and (d) of section 25 of the Interstate Commerce Act (49 U. S. C., sec. 26 (b)–26 (d)) are amended to read as follows:

"(b) The Commission may, after investigation (*and with respect to mandatory orders, after hearing, if a hearing is requested by any interested party*), if found necessary in the public interest, order any carrier within a time specified in the order, *and with respect to the whole or any part of its railroad,* to install the block signal system, interlocking, automatic train stop, train control, and/or cab-signal devices, and/or other similar appliances, methods and systems *and/or train communication systems* (*which may include telegraph, telephone, radio, inductive, or other wayside systems*) intended to promote the safety of railroad operation, which comply with specifications and requirements prescribed by the Commission, such order to be issued and published a reasonable time (as determined by the Commission) in advance of the date for its fulfillment: *Provided,* That block signal systems, interlocking, automatic train stop, train control, cab-signal devices, *and/or train communication systems* (*which may include telegraph, telephone, radio, inductive or other wayside systems*) in use on the date of the enactment of this amendatory provision or hereafter installed may not be discontinued or materially modified by carriers without the approval of the Commission: *Provided further,* That a carrier shall not be held to be negligent because of its failure to install such systems, devices, appliances, or methods, upon a portion of its railroad not included in the order, and any action arising because of an accident occurring upon such portion of its railroad shall be determined without consideration of the use of such systems, devices, appliances, or methods, upon another portion of its railroad: *And provided further, That any order of the Interstate Commerce Commission directing any carrier to take action that requires the obtaining of a radio wave band or frequency, station permit, or license under the Communications Act of 1934, as amended, shall be issued subject to the granting by the Federal Communications Commission of the required authorization. The carrier to which such order of the Interstate Commerce Commission applies shall, within such time as may be specified therein, make application to the Federal Communications Commission for such authorization. If and when such authorization is granted the carrier shall comply with the order of the Interstate Commerce Commission, subject, however, to such conditions as may be imposed by the Federal Communications Commission and to the provisions of the Communications Act of*

1934, as amended, and the rules and regulations prescribed thereunder, including the right of the Federal Communications Commission to modify, suspend, revoke, or refuse to renew the license or other authorization so granted when the public interest, convenience, or necessity so requires.

"(c) Each carrier by railroad shall file with the Commission its rules, standards, and instructions for the installation, inspection, maintenance, and repair of the systems, devices, and appliances covered by this section within six months after the enactment of this amendatory provision, *unless such rules, standards and instructions have been previously filed with the Commission,* and, after approval by the Commission, such rules, standards, and instructions, with such modifications as the Commission may require, shall become obligatory upon the carrier: *Provided, however,* That if any such carrier shall fail to file its rules, standards, and instructions the Commission shall prepare rules, standards, and instructions for the installation, inspection, maintenance, and repair of such systems, devices, and appliances to be observed by such carrier, which rules, standards, and instructions, a copy thereof having been served on the president, chief operating officer, trustee, or receiver, of such carrier, shall be obligatory: *Provided further,* That such carrier may from time to time change the rules, standards, and instructions herein provided for, but such changes shall not take effect and the new rules, standards, and instructions be enforced until they shall have been filed with and approved by the Commission: *And provided further,* That the Commission may on its own motion, upon good cause shown, revise, amend, or modify the rules, standards, and instructions *approved or* prescribed by it under this subsection and as revised, amended, or modified they shall be obligatory upon the carrier after a copy thereof shall have been served as above provided.

"(d) The Commission is authorized to inspect and test any systems, devices, and appliances referred to in this section used by any such carrier and to determine whether such systems, devices, and appliances are in proper condition to operate and provide adequate safety. For these purposes *and to carry out the other purposes of this amendatory provision,* the Commission is authorized to employ persons familiar with the subject. Such persons shall be in the classified service and shall be appointed after competitive examination according to the law and the rules of the Civil Service Commission governing the classified service. No person interested, either directly or indirectly, in any patented article required to be used on or in connection with any of such systems, devices, and appliances or who has any financial interest in any carrier or in any concern dealing in railway supplies shall be used for such purpose. *Nothing in this section shall affect the powers of the Federal Communications Commission to make any inspection or examination of equipment utilizing radio frequencies or radio frequency energy in accordance with the provisions of the Communications Act of 1934, as amended, or the rules and regulations of the Federal Communications Commission.*"

INTERSTATE COMMERCE COMMISSION,
Washington 25, D. C., April 24, 1953.

HON. CHARLES W. TOBEY,
Chairman, Committee on Interstate and Foreign Commerce,
United States Senate, Washington, D. C.

MY DEAR CHAIRMAN TOBEY: Your letter of March 23, 1953, addressed to the Chairman of the Commission and requesting comments on a bill, S. 1401, introduced by you (by request), to authorize the Interstate Commerce Commission to require carriers engaged in interstate commerce by railroad to install power brakes which comply with specifications and requirements prescribed by the Commission and to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power brakes, has been referred to our Committee on Legislation and Rules. After careful consideration by that Committee, I am authorized to submit the following comments in its behalf:

Power brake equipment for railway cars has undergone successive stages of development following the design of the first automatic air brake by George Westinghouse in 1872. In 1922, the Interstate Commerce Commission instituted an investigation under section 26 of the Interstate Commerce Act to determine (1) whether, and to what extent, power brakes and appliances for operating power-brake systems, then generally in use upon the locomotives and cars of carriers by railroad subject to the act, were adequate and in accordance with requirements of safety; (2) what improved appliances or devices were available for use; and (3) what improvements in power brakes and appliances could or should be made, all

to the end that increased safety in train operation might be obtained. A report was issued on July 18, 1924 (91 I. C. C. 481), in which progress was recorded and certain general conclusions and findings of the Commission were set forth, among them a finding that improvements in power-brake appliances could be made and increased safety in train operation could and must be achieved. Later in 1924, the Commission drafted and made public its tentative specifications and requirements covering power brakes for freight cars. Further tests and investigations were made, as a result of which a new type of brake, known as the AB brake, was developed. The Association of American Railroads adopted this brake as a standard in 1933 and, effective January 1, 1935, adopted a rule requiring that all freight cars in interchange service must be equipped with the improved brake on and after January 1, 1945.

In 1925, members of the Commission's Bureau of Safety cooperated with a committee of the mechanical division of the Association of American Railroads in the formulation of a code of rules for the maintenance and testing of airbrake equipment. These rules were issued by the AAR with the statement that they represent minimum requirements. They have since been revised and amended in some respects. There is nothing in the AAR rules, however, which requires the adoption of or the enforcement of this code of airbrake rules by any railroad company, and there is no provision of law under which their observance can be required, notwithstanding the fact that they represent minimum requirements.

The records of our Bureau of Safety show that there is widespread nonobservance of these rules. In the fiscal year 1952, the Bureau's inspectors made airbrake tests on 2,661 trains, consisting of 122,214 cars, before departure from terminals. Railroad forces had prepared these trains for departure. When tested by the Commission's inspectors, it was found that brakes were defective or inoperative on 5,626 of the cars. Most, if not all, of the cars with inoperative or defective brakes should have been discovered and given proper attention while the trains were being prepared for departure. There is no doubt that if tests had not been conducted subsequently by the Commission's inspectors, the cars would have been allowed to depart with brakes in defective or inoperative condition. This general condition can be corrected by the adoption and enforcement of adequate airbrake rules.

During the past 5 years, the Commission has investigated 6 accidents caused by failure to enforce rules pertaining to inspection, maintenance, or use of airbrake systems. These accidents resulted in the death of 5 persons and injury to 110 persons. In most cases, the cause of the accident was found to be inadequate tests and maintenance of the airbrake systems. Our investigation of the accident which occurred on the line of the Washington Terminal Co. at Union Station, Washington, D. C., on January 15, 1953, disclosed that the angle cock at the rear of the third car of the train had become closed, due to contact between the handle and the bottom cross member, thus making it impossible to apply the brakes of the rear 13 cars of the train from the locomotive. As a result of our investigation, it was recommended that cars on which any angle cock is so located that the handle can come into contact with any other portion or appurtenance of the car be withheld from service until such condition is corrected.

The railroads collectively, through the Association of American Railroads, have failed to bring about the general adoption and enforcement of satisfactory rules for maintenance and testing of airbrakes. At the present time the Commission is without authority to require corrective action in this respect, and can only recommend as to the installation, specifications, maintenance, and tests of airbrake systems.

S. 1401 would authorize the Commission to require the installation of power or train brakes which comply with specifications and requirements prescribed by it, and to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power or train brakes. The bill would amend the Safety Appliance Acts to give the Commission authority with regard to power or train brakes very similar to that which it now has with respect to block signal systems, interlocking, automatic train stop, train control, and cab-signal devices under section 25 of the Interstate Commerce Act, and to that which it now has with respect to locomotives, tenders, or parts and appurtenances thereto, under the Locomotive Inspection Act.

Certain improvements and changes in the original draft of the bill have been suggested which we believe should be given consideration. It now appears that instead of amending section 1 of the act of March 2, 1893, it would be more appropriate to amend section 2 of the act of March 2, 1903. The words "power brakes," where they appear in the title of the bill should be changed to "power or train

brakes" to conform to the text of the bill. Other minor changes also appear desirable. As a substitute for the bill as originally introduced, we suggest consideration of the draft appended to this letter.

We are in accord with the purposes of this bill and we recommend that S. 1401, appropriately amended, be adopted.

Respectfully submitted.

WALTER M. W. SPLAWN,
Chairman, Committee on Legislation and Rules.
CHARLES D. MAHAFFIE.
HUGH W. CROSS.

APPENDIX

A BILL To authorize the Interstate Commerce Commission to require carriers engaged in interstate commerce by railroad to install power or train brakes which comply with specifications and requirements prescribed by the Commission and to prescribe rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power or train brakes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 2 of the Act of March 2, 1903 (ch. 976, sec. 2, 32 Stat. 943; 45 U. S. Code, title 45, ch. I, secs. 1–16) is amended to read as follows:

"SEC. 2. That whenever, as provided in said Act, any train is operated with power or train brakes, not less than fifty per centum of the cars in such train shall have their brakes used and operated by the engineer of the locomotive drawing such train; and all power-braked cars in such train which are associated together with said fifty per centum shall have their brakes so used and operated; and, to more fully carry into effect the objects of said Act, the Interstate Commerce Commission may, from time to time, after full hearing, increase the minimum percentage of cars in any train required to be operated with power or train brakes which must have their brakes used and operated as aforesaid. The Interstate Commerce Commission may, after investigation, if found necessary in the public interest, order any carrier engaged in interstate commerce by railroad to install power or train brakes which comply with specifications and requirements prescribed by the Commission. Each common carrier engaged in interstate commerce by railroad shall file with the Commission within three months after the enactment hereof its rules, standards, and instructions for the installation, inspection, maintenance, and repair of the power or train brakes covered by this section, and, after approval by the Commission such rules, standards, and instructions, with such modifications as the Commission may require, shall become obligatory upon the carrier: *Provided, however,* That if any such carrier shall fail to file its rules, standards, and instructions the Commission shall prepare rules, standards, and instructions for the installation, inspection, maintenance, and repair of such power or train brakes to be observed by such carrier, which rules, standards, and instructions, a copy thereof having been served on the president, chief operating officer, trustee, or receiver, of such carrier, shall be obligatory: *Provided further,* That such carrier may from time to time change the rules, standards, and instructions herein provided for, but such change shall not take effect and the new rules, standards, and instructions be enforced until they shall have been filed with and approved by the Commission: *And provided further,* That the Commission may on its own motion, upon good cause shown, revise, amend, or modify the rules, standards, and instructions approved or prescribed by it under this section, and as revised, amended, or modified they shall be obligatory upon the carrier after a copy thereof shall have been served as above provided. The provisions and requirements of this section shall be held to apply to all trains, locomotives, tenders, cars, and similar vehicles used, hauled, or permitted to be used or hauled by any railroad engaged in interstate commerce; and failure to comply with any such requirements of the said Interstate Commerce Commission shall be subject to the like penalty as failure to comply with any requirements of this section."